FCT Fundação para a Ciência e a Tecnologia

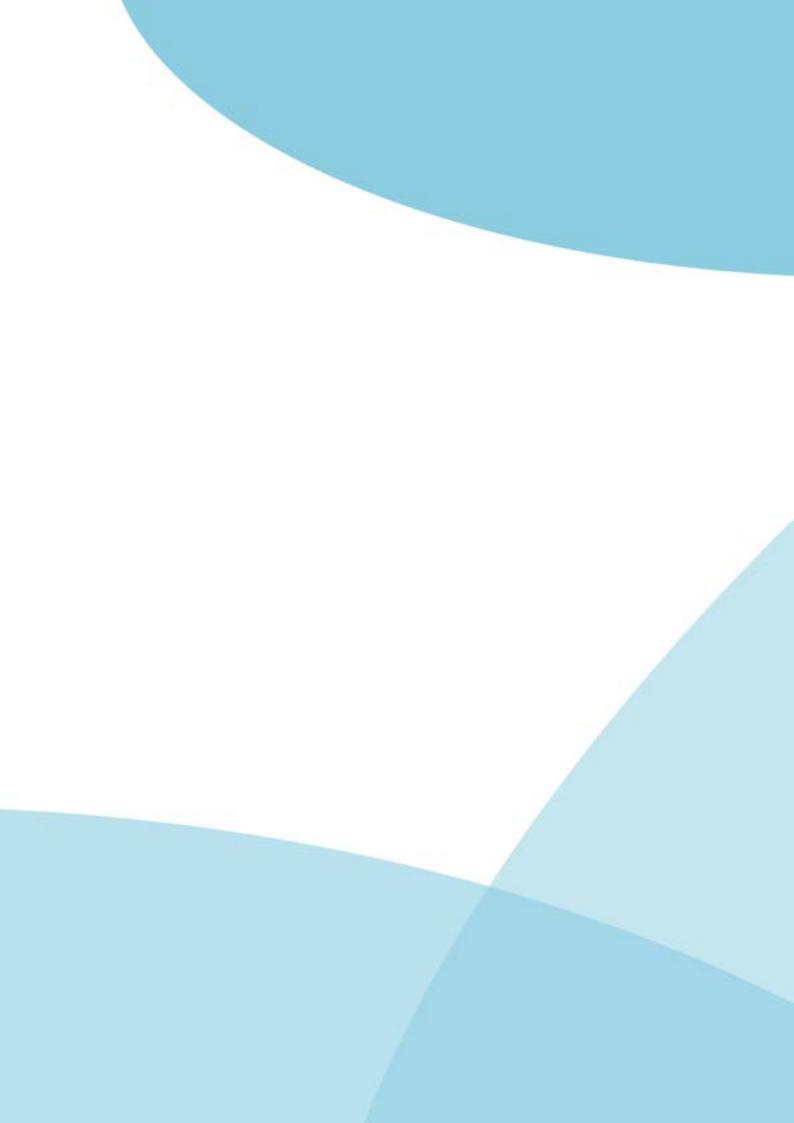
MINISTÉRIO DA EDUCAÇÃO E CIÊNCIA

7th Framework programme (2007-2013)

PROJECTS WITH PORTUGUESE COORDINATION







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^{*} Under preparation. To be inserted later.





HEALTH

ANIMPACT

An Ethical, Legal and Practical Perspective on the Impact of a New Regulatory Framework for the Scientific use of Animals on Research and Innovation

INFORMATION

Contract Number

602616

Theme

Health

Instrument

CSA

Total Cost

557.489 €

EC Contribution

498.555 €

Coordinator EC Contribution

138.794 €

Project Start Date

01-Oct-13

Scientific Coordinator

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INSTITUTO DE BIOLOGIA MOLECULAR E CELULAR R. do Campo Alegre 823 4150-180 PORTO

Duration

36 Months

Project Website www.animpact.eu

ABSTRACT (Project Objectives & Description of Work)

The ANIMPACT project aims to analyse the interactions between EU animal experimentation legislation (Directive 2010/63/EU) and health research and innovation.

European legislation regulating animal experimentation is based on the need to balance the two important interests at stake: advancing research and protecting animal welfare. This legislation has recently undergone substantial revision, resulting in Directive 2010/63/EU, which aims to create a greater harmonization across the European research area in terms of animal welfare and conditions for research.

ANIMPACT focuses on aspects of decision-making over animal research. Addressing externally imposed norms and standards, ANIMPACT studies:

- legal norms and the licensing process for animal research;
- ethical norms and the ethical review process.

In studying internal norms and standards, ANIMPACT asks:

- how scientists take animal welfare and the *Replace, Reduce, and Refine* principle (3Rs) of animal use into account in decisions over research;
- how legislation and other factors interact with decisions over which species of animals to choose;
- how legislation is perceived by researchers and industry.

PROJECT RESULTS

ANIMPACT will provide a map of the ethics review system for animal experiments in the EU, as well as a clear understanding of how different stakeholders view formal regulations and operate both formal and informal selfregulation in animal research.

An interactive website to share information among scientists, animal welfare officers, members of animal ethics committees and animal welfare bodies will ensure an impact that goes beyond the duration of the ANIMPACT project.







ISTITUTO SUPERIORE DI SANITA - Italy KOBENHAVNS UNIVERSITET - Denmark LUDWIG-MAXIMILIANS-UNIVERSITAET MUENCHEN - Germany

THE UNIVERSITY OF SHEFFIELD - United Kingdom

UNIVERSITEIT MAASTRICHT - Netherlands



KBBE

ASFORCE

Targeted Research Effort on African Swine Fever

INFORMATION

Contract Number

311931

Theme

KBBE

Instrument

CP-TP

Total Cost

6.559.773 €

EC Contribution

5.000.000 €

Coordinator EC Contribution

484.459 €

Project Start Date

1-Oct-12

Scientific Coordinator

Carlos Martins

(cmartins@fmv.utl.pt)

UNIVERSIDADE DE LISBOA FAC. MEDICINA VETERINÁRIA DEP. DE SANIDADE ANIMAL Av. da Univ. Técnica, Polo Universitário do Alto da Ajuda 1300-477 LISBOA

Duration

36 Months

Project Website http://asforce.org

ABSTRACT (Project Objectives & Description of Work)

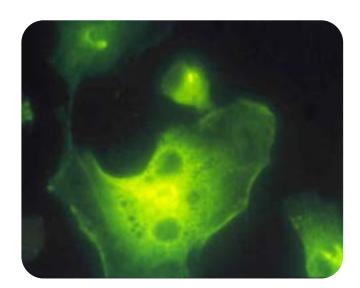
African Swine Fever (ASF) is a devastating disease of domestic swine, caused by a complex virus that is transmitted and maintained in different natural scenarios involving domestic and wild swine and arthropod vectors (soft ticks, genus Ornithodoros). Occurrence of ASF causes significant socio-economic impact in affected countries, constraining pig production by livestock farmers, and affecting national, regional and international trade. No vaccine is available and control and eradication of the disease are mainly based on the early diagnosis and on the implementation of strict sanitary measures including, among others, compulsory stamping out of animals. The disease is endemic in Sub-Saharan countries of Africa and, in EU member states, is currently confined to Italy (Sardinia). However, in 2007, it was introduced and spread in Armenia, Georgia, Azerbaijan and in the Russia Federation, imposing a serious threat to EU countries. This project aims at contributing to identify and solve main relevant issues regarding the prevention of ASF entry into the EU, mainly focusing on the threat by the current occurrence and spread of the disease in Eastern Europe.

PROJECT RESULTS

The project will provide: (i) essential information to design more cost-effective surveillance and control strategies for ASF in different risk scenarios; (ii) data essential to identify risk factors for designing new control strategies, including wildlife considerations (role of wild boar and soft ticks); (iii) vaccine development through rational deletion of genes to produce attenuated and non-replicating candidate ASF vaccine strains and through the identification of protective antigens and their incorporation into vectored virus vaccines, (iv) preparedness for ASF at different levels, through workshops targeting pig farmers, hunters, practicing pig veterinarians, veterinary health-authorities and governmental agencies in EU and in ASF affected countries.

Knowledge and new technologies developed within the project will be disseminated through multiple information channels (publications, mass media and internet). The outputs of this project will provide policy makers with valuable decision support tools to better prevent and control ASF.







FUNDAÇÃO CALOUSTE GULBENKIAN – Portugal

UNIVERSIDAD COMPLUTENSE DE MADRID - Spain

INSTITUTO NACIONAL DE INVESTIGACION Y TECNOLOGIA AGRARIA Y ALIMENTARIA – Spain

AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS - Spain

CENTRE DE COOPERATION INTERNATIONAL EN RECHERCHE AGRONOMIQUE POUR LE DEVELOPPEMENT – France

ISTITUTO ZOOPROFILATTICO SPERIMENTALE DELL'UMBRIA E DELLE MARCHE - Italy

FRIEDRICH LOEFFLER INSTITUT -BUNDESFORSCHUNGSINSTITUT FUER TIERGESUNDHEIT - Germany

THE ROYAL VETERINARY COLLEGE - United Kingdom

THE PIRBRIGHT INSTITUTE - United Kingdom

AGENCE NATIONALE DE SECURITE SANITAIRE DE L'ALIMENTATION, DE L'ENVIRONNEMENT ET DU TRAVAIL -France

STATE RESEARCH INSTITUTION NATIONAL RESEARCH INSTITUTE FOR VETERINARY VIROLOGY AND MICROBIOLOGY - Russia

INMUNOLOGIA Y GENETICA APLICADA SA - Spain

PFIZER OLOT, S.L.U. - Spain

BULGARIAN FOOD SAFETY AGENCY - Bulgaria

DIOMUNE S.L. - Spain

SAFOSO AG (SAFE FOOD SOLUTIONS) - Switzerland

FOOD AND AGRICULTURE ORGANISATION OF THE UNITED NATIONS FAO - Italy

ASFRISK

Evaluating and Controlling the Risk of African Swine Fever in the

INFORMATION

Contract Number 211691

> Theme KBBE

Instrument

CP-FP

Total Cost

3.981.458 €

EC Contribution

2.984.713 €

Coordinator EC Contribution

339.000 €

Project Start Date

1-Apr-08

Scientific Coordinator

Carlos Martins (cmartins@fmv.utl.pt)

UNIV. TÉCNICA DE LISBOA FAC. MEDICINA VETERINÁRIA Av. da Univ. Técnica, Polo Universitário do Alto da Ajuda 1300-477 LISBOA

Duration

42 Months

Project Website www.asfrisk.eu

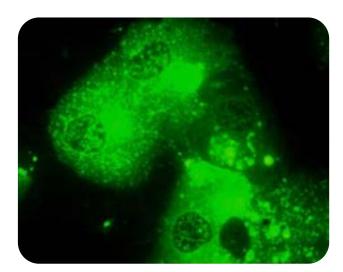
ABSTRACT (Project Objectives & Description of Work)

The main objectives of this project were: (i) to characterise relevant aspects of the epidemiology of African swine fever (ASF) in different natural settings and to develop and validate risk analysis methodologies and establish effective control and eradication measures against the disease; (ii) to develop and validate improved diagnostic techniques; (iii) to characterise functions of viral genes involved in pig immune responses and to obtain recombinant African Swine Fever Virus (ASFV) to be used as a model for vaccine development; (iv) to transfer the knowledge and technology developed to institutions dealing with animal health issues at international level.

PROJECT RESULTS

- Epidemiological methods and decision support tools were developed that will enable the prioritisation and implementation of strategies to better prevent and control the potential spread of ASF in the EU and other regions;
- Different serological and molecular diagnostic tests have been developed for use in international and national reference laboratories as well as in regional and local laboratories, as well as rapid tests for field application (pen-side tests) that altogether will contribute to an earlier and effective diagnosis of the disease;
- Different interactions ASFV-host have been characterised at the molecular and cellular level and different recombinant attenuated viruses were produced to be used as vaccine models;
- Six international courses and several traineeships on epidemiology, diagnosis and control of ASF have been organised, involving a large number of professionals from animal health institutions in EU, Africa, Asia (China and Vietnam) and Russian Federation.







FUNDAÇÃO CALOUSTE GULBENKIAN - Portugal

UNIVERSIDAD COMPLUTENSE DE MADRID - Spain

INSTITUTO NACIONAL DE INVESTIGACION Y TECNOLOGIA AGRARIA Y ALIMENTARIA -Spain

AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS - Spain

CENTRE DE COOPERATION INTERNATIONAL EN RECHERCHE AGRONOMIQUE POUR LE DEVELOPPEMENT - France

ISTITUTO ZOOPROFILATTICO SPERIMENTALE DELL'UMBRIA E DELLE MARCHE - Italy

FRIEDRICH LOEFFLER INSTITUT -BUNDESFORSCHUNGSINSTITUT FUER TIERGESUNDHEIT - Germany

THE ROYAL VETERINARY COLLEGE - United Kingdom

STATENS VETERINAERMEDICINSKA ANSTALT - Sweden

AGRICULTURAL RESEARCH COUNCIL (ARC) - South Africa

MINISTÈRE DE LA PRODUCTION ANIMALE ET DES RESSOURCES HALIEUTIQUES - Ivory Coast

CENTRUM VOOR ONDERZOEK IN DIERGENEESKUNDE EN AGROCHEMIE -CODA - Belgium

LANZHOU VETERINARY RESEARCH INSTITUTE - China

NATIONAL INSTITUTE OF VETERINARY RESEARCH - Vietnam

INMUNOLOGIA Y GENETICA APLICADA SA - Spain

THE QUEEN'S UNIVERSITY OF BELFAST - United Kingdom

ECSAFESEAFOOD

Priority environmental contaminants in seafood: safety assessment, impact and public perception

INFORMATION

Contract Number

311820

Theme

KBBE

Instrument

CP-FP

Total Cost

5.089.558 €

EC Contribution

3.999.874 €

Coordinator EC Contribution

497.214 €

Project Start Date

01-Feb-2013

Scientific Coordinator

António Marques (amarques@ipma.pt)

INST. PORTUGUÊS DO MAR E DA ATMOSFERA – IPMA RUA C DO AEROPORTO 1749-077 LISBOA

Duration

48 Months

Project Website www.ecsafeseafood.eu

ABSTRACT (Project Objectives & Description of Work)

ECsafeSEAFOOD aims to assess seafood safety of non-regulated priority environmental contaminants and their impact on public health. Contaminants foreseen include toxins from harmful algal blooms, marine litter, brominated flame retardants, toxic metal speciation, pharmaceutical and personal care products, and endocrine disruptors. The project shall assess risks associated to several seafood species consumed in Europe, taking into account the effect of processing and cooking, using available information, seafood sample collection and toxicological tools. The project shall also develop mitigation strategies, fast screening and detection methods for stakeholders, as well as establish links between contaminants in the environment and seafood for relevant contaminants. Clear, practical and educational dissemination strategies are also foreseen.

PROJECT RESULTS

The project will monitor the presence of priority environmental contaminants in seafood, prioritize those that are real hazards for human health, and assess the transfer of relevant priority environmental contaminants between the environment and seafood, taking into account the effect of processing, cooking and climate change. It will also develop, validate and provide new, easier and faster tools to assess the presence of environ-mental contaminants in seafood products. These chemical hazards' impact on public health will be assessed in realistic conditions using innovative toxicological tools and in-depth probabilistic exposure tools for risk assessment. An online tool, guidelines for stakeholders and phycoremediation technologies, at pilot scale, will be developed as mitigation measures. In coordination with risk manager, particular attention will be paid to the missing information and to the way how it should be disseminated among to the general public and vulnerable consumer groups. In this way, the European Maximum Reference Levels (MRLs) in seafood will be confirmed/refined for real hazard contaminants and for which no legislation exists or the information is still insufficient.









FUNDACION AZTI/AZTI FUNDAZIOA - Spain

UNIVERZA V MARIBORU - Slovenia

UNIVERSITEIT GENT - Belgium

NORWEGIAN VETERINARY INSTITUTE - Norway

INSTITUT CATALA DE RECERCA DE L'AIGUA FUNDACIO PRIVADA - Spain

DANMARKS TEKNISKE UNIVERSITET -Denmark

EIGEN VERMOGEN VAN HET INSTITUUT VOOR LANDBOUW EN VISSERIJONDERZOEK - Belgium

INSTITUTO DE CIÊNCIAS E TECNOLOGIAS AGRÁRIAS E AGRO-ALIMENTARES -Portugal

INSTITUT DE RECERCA I TECNOLOGIA AGROALIMENTARIES - Spain

STICHTING DIENST LANDBOUWKUNDIG ONDERZOEK - Netherlands

UNIVERSITAT ROVIRA I VIRGILI - Spain

AEIFORIA SRL - Italy

AQUATT UETP LTD - Ireland

AGENCE POUR LA RECHERCHE ET LA VALORISATION MARINE - France

POLYINTELL SAS - France

HORTIMARE PROJECTS & CONSULTANCY BV - Netherlands

DAN SALMON AS - Denmark

EUROLEGUME

Enhancing of Legumes Growing in Europe Through Sustainable Cropping for Protein Supply for Food and Feed

INFORMATION

Contract Number

613781

Theme

KBBE

Instrument

CP-IP

Total Cost 6.572.840 €

EC Contribution

4.993.592 €

Coordinator EC Contribution

742.816 €

Project Start Date

01-Jan-2014

Scientific Coordinator

Eduardo Rosa (erosa@utad.pt)

UNIV. DE TRÁS-OS-MONTES
E ALTO DOURO ~UTAD
ESC. DE CIÊNCIAS AGRÁRIAS E
VETERINÁRIAS
DEP. DE AGRONOMIA
Ap. 1013
5001-801 VILA REAL

Duration

48 Months

Project Website http://cordis.europa.eu/projects/r cn/111423_en.html

ABSTRACT (Project Objectives & Description of Work)

The EUROLEGUME project aims at improving the sustainable production of leguminous crops and their multipurpose use in a changing climate, ensuring new varieties and new food and feed products, broadening the production area and thus making the EU more competitive and sustainable.

Despite the considerable importance of legumes to both agriculture and pristine ecosystems, key gaps in knowledge remain. The research within the framework of EUROLEGUME will be directed to improvements in yield parameters, biotic and abiotic stress resistance, nitrogen fixation (in plants and in soil), and nutritional value in sustainable legume (faba beans, peas, cowpea) cultivation systems in Europe by introducing new genotypes from different geographical regions and by exploiting/ introducing available genetic resources in active cropping systems, using both molecular technologies and evaluating the influence of legumes on the following crops in rotation and as intercrops in situ.

PROJECT RESULTS

Legumes, such as beans and peas, have been an important source of protein since ancient times in Europe. During the last decades, the percentage of locally grown legumes in agriculture and in the human diet is decreasing, and the project will result in:

- New food and feed products through implementation of new processing technologies, recipies and new genotypes of high nutritional quality for commercial growing of faba beans and peas;
- Sustainable usage of soil resources and diminishing the load on the environment by intensified biological nitrogen fixation through increased activity of Rhizobia and arbuscular mycor-rhizal fungi and new genotypes of high adaptive plasticity to environmental stresses.







LATVIJAS LAUKSAIMNIECIBAS UNIVERSITATE - Latvia

PURES DARZKOPIBAS PETIJUMU CENTRS SIA - Latvia

VALSTS PRIEKULU LAUKAUGU SELEKCIJAS INSTITUTS - Latvia

SABIEDRIBA AR IEROBEZOTU ATBILDIBU BIOEFEKTS - Latvia

EESTI TAIMEKASVATUSE INSTITUUT - Estonia

UNIVERSITETI BUJQESOR I TIRANES - Albania

JTI - INSTITUTET FÖR JORDBRUKS- OCH MILJÖTEKNIK AB - Sweden

FRESCURA SUBLIME - UNIPESSOAL LDA - Portugal

UNIVERSIDAD POLITECNICA DE CARTAGENA - Spain

INSTITUTO NACIONAL DE INVESTIGAÇÃO AGRÁRIA E VETERINÁRIA - Portugal

UNIVERSITAET FUER BODENKULTUR WIEN - Austria

AGRICULTURAL UNIVERSITY OF ATHENS - Greece

NORWEGIAN INSTITUTE FOR AGRICULTURAL AND ENVIRONMENTAL RESEARCH – BIOFORSK - Norway

NORGES MILJO-OG BIOVITENSKAPLIGE UNIVERSITET - Norway

SYMBIOM, S.R.O. - Czech Republic

KPRA SOCIEDAD COOPERATIVA - Spain

ESTIRPE D'HONRA - UNIPESSOAL LDA - Portugal

FAHRE

Food and Health Research in Europe

INFORMATION

Contract Number

245278

Theme

KBBE

Instrument

CSA-SA

Total Cost

1.206.369 €

EC Contribution

999.218 €

Coordinator EC Contribution

224.553 €

Project Start Date

01-Jan-10

Scientific Coordinator

Augusto Medina (augustomedina@spi.pt)

SOCIEDADE PORTUGUESA DE INOVAÇÃO S.A. Av. M. Gomes da Costa, 1376 4150-356 PORTO

Duration

28 Months

Project Website www.spi.pt/fahre

ABSTRACT (Project Objectives & Description of Work)

The FAHRE project aimed at increasing the structuring of food and health research and supported cooperation towards the European Research Area (ERA).

- Project activities have included:
- Mapping of the main actors and processes associated to research funding and policy development in the area of food and health;
- Assessment of the needs and capacities in food and health research, having addressed aspects such as infrastructures, technology tools and technical expertise in order to identify gaps and overlaps;
- Development of a strategy to improve the organisation of food and health research in Europe.

PROJECT RESULTS

Project results are reflected in a set of documents that can be found at the FAHRE website:

- Mapping research programs on nutrition and health in Europe (summary report and 32 country reports);
- Assessment of food and health research needs (summary report and 9 thematic reports);
- Strategic proposals related to policy making that, in turn, will have a positive impact on the health and quality of life of European citizens.







EUROQUALITY SARL - France

UNIVERSITY COLLEGE LONDON - United Kingdom

SKALBES - Latvia

UNIVERSITÀ DEGLI STUDI DI MILANO - Italy

DIALOGIK GEMEINNUETZIGE GESELLSCHAFT FUER KOMMUNIKATIONS-UND KOOPERATIONSFORSCHUNG MBH -Germany

SIK - INSTITUTET FOER LIVSMEDEL OCH BIOTEKNIK AB - Sweden

SPECIAL

SPonge Enzymes and Cells for Innovative AppLications

INFORMATION

Contract Number

266033

Theme

KBBE

Instrument

CP-FP

Total Cost

3.868.136 €

EC Contribution

2.991.682 €

Coordinator EC Contribution

532.932 €

Project Start Date

1-Dec-10

Scientific Coordinator

Rui L. Reis

(rgreis@dep.uminho.pt)

UNIVERSIDADE DO MINHO

GRUPO 3B'S

Largo do Paço

4704-553 BRAGA

Duration

36 Months

Project Website www.project-special.eu youtube.com/user/projectSPECIALeu

ABSTRACT (Project Objectives & Description of Work)

Reflecting the strategic objectives outlined in the European Strategy for Marine and Maritime Research, the project SPECIAL aims at demonstrating the potential of marine sponges through a biotechnological approach to the production and identification of compounds relevant to human health. The project focuses on the study of cellular metabolites with potential anti-cancer effects from several species of sponges. Alongside this research, the project will develop new biomedical/industrial applications of biosilica and collagen, taking advantage of the unique physical-chemical properties of these extracellular sponge products.

The consortium unites seven world-class research institutions covering a wide range of marine biotechnology-related disciplines and four knowledge-intensive SMEs that are active in the field of sponge culture, drug development and nanobiotechnology.

The project will contribute to the development of Marine Biotechnology at the European level, providing new opportunities for the industry to exploit natural marine resources in a sustainable manner and will demonstrate the biotechnological potential of marine sponges.

PROJECT RESULTS

- Collection and characterization of various species of sponges from different habitats, namely Mediterranean Sea, Red Sea, Azores and Caribbean Sea (Curação);
- Successful mariculture of two species of marine sponges;
- Extraction and characterization of collagen from one species of sponge;
- Characterization of genes regulating collagen expression on sponges;
- In-vitro culture of sponge cells with a primmorph development state;
- Screening of sponge extracts and subsequent fractions for anti-tumor activity in order to identify bioactive compounds;
- Development of nature made scaffolds for tissue engineering approaches from the collagen native structure of several sponge species;
- Delivery of newsletters, available through the project website;
- Production of videos on project topics (within Marine Biotechnology), available through the project SPECIAL YouTube channel;
- Organization of Open Days about project outputs and Marine Biotech-









TEL AVIV UNIVERSITY - Israel

PORIFARMA BV - Netherlands

STUDIO ASSOCIATO GAIA SNC DEI DOTTORI ANTONIO SARA E MARTINA MILANESE - Italy

UNIVERSITÀ DEGLI STUDI DI GENOVA - Italy

UNIVERSITAETSMEDIZIN DER JOHANNES GUTENBERG-UNIVERSITAET MAINZ -Germany

NATIONAL RESEARCH CENTER FOR GEOANALYSIS - China

KAROLINSKA INSTITUTET - Sweden

ATRAHASIS SRL - Italy

UNIVERSIDADE DOS AÇORES - Portugal

NANOTECMARIN GMBH - Germany

TRACK FAST

Training Requirements and Careers for Knowledge-Based Food Science and Technology in Europe

INFORMATION

Contract Number

227220

Theme

KBBE

Instrument

CSA-SA

Total Cost

1.182.530 €

EC Contribution

999.976 €

Coordinator EC Contribution

191.331 €

Project Start Date

1-Sep-09

Scientific Coordinator

Cristina L. M. Silva (clsilva@porto.ucp.pt)

UNIV. CATÓLICA PORTUGUESA ESCOLA SUP. DE BIOTECNOLOGIA R. Dr. Ant. Bernardino Almeida 4200-072 PORTO

Duration

42 Months

Project Website www.trackfast.eu

ABSTRACT (Project Objectives & Description of Work)

The Track_Fast project involves 27 partners from 16 EU countries. Its main objective is the identification of the training and career requirements of future European Food Scientists and Technologists (FST) and the implementation of a European Strategy to recruit the next generation of FST leaders.

Track_Fast will achieve this goal through: (i) Identification and definition of personal skills requirements in the food job market; (ii) Developments for the regulation of food science and technology professions in Europe; (iii) Establishment of a framework for continual professional training and career development for the FST professionals; (iv) Motivation of young people to enter and pursue a career in food science and technology in Europe.

PROJECT RESULTS

The knowledge / skills required for food professionals, and how / when to be acquired were identified. In addition to the scientific knowledge, skills called "soft skills" were identified as very important: e.g. communication, thinking & solving problems, and show a positive attitude.

The project's contribution to attract young people to the field of food was the creation of a website *www.foodgalaxy.org*. It aims to make food attractive, but also show that the power is a "science with real issues".

A CPD (Career Plan Development) and the website www.foodcareers.eu were developed to enable professionals to develop their careers, have a network for professionals / students, and communicate and find the tools to develop training.







UNIVERZA V LJUBLJANI - Slovenia

SIK - INSTITUTET FOER LIVSMEDEL OCH BIOTEKNIK AB - Sweden

FEVIA - Belgium

ASOCIACION DE INVESTIGACION DE LA INDUSTRIA AGROALIMENTARIA. - Spain

ESCOLA SUPERIOR AGRÁRIA DE COIMBRA - Portugal

INSTITUT DES SCIENCES ET INDUSTRIES DU VIVANT ET DE L'ENVIRONNEMENT -AGRO PARIS TECH - France

UNIVERSITAT POLITECNICA DE VALENCIA - Spain

GAZIANTEP UNIVERSITESI - Turkey

EUROPEAN FEDERATION OF FOOD SCIENCE AND TECHNOLOGY - Netherlands

UNIVERSITY OF LEEDS - United Kingdom

TECHNISCHE UNIVERSITAT BERLIN - Germany

BUDAPESTI CORVINUS EGYETEM - Hungary

NATIONAL TECHNICAL UNIVERSITY OF ATHENS - Greece

UNIVERSITÀ DEGLI STUDI DI TERAMO - Italy

UNIVERSITATEA DE STIINTE AGRONOMICE SI MEDICINA VETERINARA - BUCURESTI -Romania

FEDERAÇÃO DAS INDUSTRIAS PORTUGUESAS AGRO-ALIMENTARES -Portugal

ALMA MATER STUDIORUM-UNIVERSITÀ DI BOLOGNA - Italy

UNIVERSITAET FUER BODENKULTUR WIEN - Austria

ISEKI-FOOD ASSOCIATION - Austria

KAUNO TECHNOLOGIJOS UNIVERSITETAS - Lithuania

UNIVERSITEIT GENT - Belgium

AKKREDITIERUNGSAGENTUR FUER STUDIENGAENGE EV - Germany

EUROPEAN ASSOCIATION FOR FOOD SAFETY AISBL - Belgium

KAROLINSKA INSTITUTET - Sweden

UNILEVER RESEARCH AND DEVELOPMENT VLAARDINGEN BV - Netherlands

INSTITUTO POLITÉCNICO DE VIANA DE CASTELO - Portugal



ICT

AMBER

Assessing, Measuring, and Benchmarking Resilience

INFORMATION

Contract Number

216295

Theme

ICT

Instrument

CSA-CA

Total Cost

1.050.070 €

EC Contribution

1.050.000 €

Coordinator EC Contribution

298.912 €

Project Start Date

01-Jan-08

Scientific Coordinator

Henrique Madeira (henrique@dei.uc.pt)

UNIVERSIDADE DE COIMBRA
FAC. DE CIÊNCIAS E TECNOLOGIA
DEP. ENG. INFORMÁTICA
R. SÍLVIO LIMA, PÓLO II
3030-790 COIMBRA

Duration

24 Months

Project Website http://amber.dei.uc.pt

ABSTRACT (Project Objectives & Description of Work)

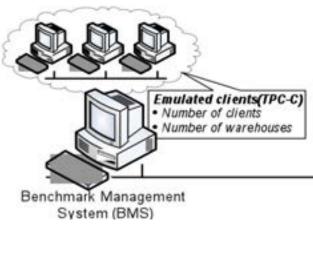
The AMBER project aimed to coordinate the study of resilience measuring and benchmarking in computer systems and components, fostering European research in order to address the big challenges on resilience assessment posed by current and forthcoming computer systems and computer-based infrastructures.

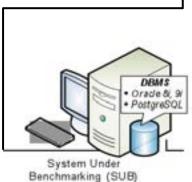
This project has brought together leading research teams on assessment, measurement, and benchmarking of resilience in computer systems in order to coordinate the effort of defining metrics and benchmarks for comparative evaluation of the resilience of computer systems and components.

PROJECT RESULTS

- Built consensus on common understanding, methodologies and practices for resilience assessment;
- Integrated and coordinated european research and practice on resilience assessment;
- Established a resilience assessment and benchmarking research forum through the AMBER web portal and built and maintained a repository to analyse and share resilience measurement data;
- Defined a research agenda on the key topics for enhancing and advancing european research and industry on assessing resilience and benchmarking resiliency of systems and infrastructures.







BUDAPESTI MUSZAKI ES GAZDASAGTUDOMANYI EGYETEM -Hungary

CHALMERS TEKNISKA HOEGSKOLA AB - Sweden

THE CITY UNIVERSITY - United kingdom

UNIVERSITY OF NEWCASTLE UPON TYNE - United Kingdom

UNIVERSITÀ DEGLI STUDI DI FIRENZE - Italy

RESILTECH SRL - Italy

C2POWER

Cognitive Radio and Cooperative strategies for Power Saving in Multi-Standard Wireless Devices

INFORMATION

Contract Number

248577

Theme

ICT

Instrument

CP-FP-INFSO

Total Cost

5.159.714 €

EC Contribution

3.450.888 €

Coordinator EC Contribution

565.995 €

Project Start Date

01-Jan-10

Scientific Coordinator

Jonathan Rodriguez (jonathan@av.it.pt)

INST. DE TELECOMUNICAÇÕES
Instituto Superior Técnico,
Torre Norte - Piso 10
Av. Rovisco Pais, 1
1049-001 LISBOA

Duration

36 Months

Project Website www.ict-c2power.eu

ABSTRACT (Project Objectives & Description of Work)

The main objective of the C2POWER project was to research, develop and demonstrate energy saving technologies for multi-standard wireless mobile devices by exploiting the combination of cognitive radio and cooperative strategies while still enabling the required performance in terms of data rate and QoS (Quality of Service) to support broadband applications.

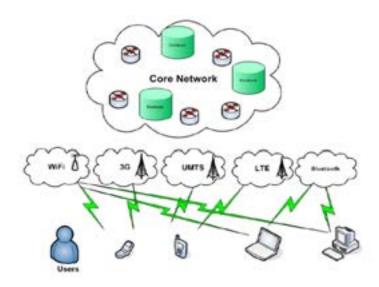
In particular, the C2POWER project investigated two complementary techniques to increase energy efficiency at the wireless interface of handsets: (i) cooperative power saving strategies leading to new disruptive networking topologies based on short-range collaborating with long-range networks enabled though collaborative mobile handset devices acting as gateways; (ii) cognitive handover mechanisms to select the "best available" Radio Access Technology which has the lowest energy demand in a future heterogeneous networking (HetNet) environments ecosystem.

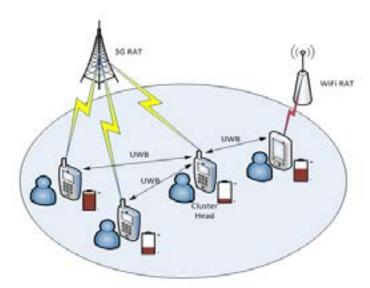
PROJECT RESULTS

The C2POWER project was about cooperation, more intelligent handsets (cognition) that are context-aware, and efficient energy RF circuits that in unison can reduce the global energy consumption on the mobile side and provide a step closer to securing Europe's competitive stance in the fast approaching 5G era:

- It has secured the market penetration for next generation handsets that are currently power hungry;
- It has opened up new business models in terms of providing incentives for collaborators moving away from network centric modeling;
- It has impacted mobile markets though standardization;
- It has impacted public safety scenarios and markets by increasing battery lifetime due to energy compliant RF circuits;
- It was seen as an eco-friendly technology, reducing radio "pollution" through more effective use of radio resources.







Short-range Cooperation

COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES - France

UNIVERSITY OF SURREY - United Kingdom

CREATE-NET (CENTER FOR RESEARCH AND TELECOMMUNICATION EXPERIMENTATION FOR NETWORKED COMMUNITIES) - Italy

PORTUGAL TELECOM INOVACAO SA - Portugal

SIGINT SOLUTIONS LTD - Cyprus

WROCLAWSKIE CENTRUM BADAN EIT+ SP Z O.O - Poland

CASSIDIAN SAS - France

VEEBEAM LTD - United Kingdom

INFINEON TECHNOLOGIES AG - Germany

LANTIQ DEUTSCHLAND GMBH - Germany

INFORMATION

Contract Number 216462

> Theme **ICT**

Instrument

CP-FP-INFSO

Total Cost 5.693.908 €

EC Contribution 3.699.637 €

Coordinator EC Contribution

548.773 €

Project Start Date 01-Mar-08

Scientific Coordinator

Telma Mota (telma@ptinovacao.pt)

PT INOVAÇÃO, S.A. Av. Fontes Pereira de Melo, 40 1069-300 LISBOA

Duration

29 Months

Project Website http://iad.av.it.pt/ccast/

ABSTRACT (Project Objectives & Description of Work)

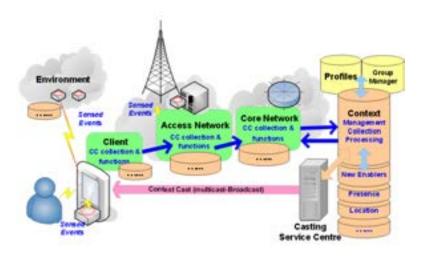
The main objective of the Project Context Casting (C-Cast) was to evolve mobile multimedia multicasting to exploit the increasing integration of mobile devices with our everyday physical world and environment. This project evolved from the realisation that that multicasting is the key enabler that will make mobile context aware services commercially attractive. Use of mobile multicast communication especially for multimedia content has always been a very attractive proposition. There are many situations when a multicast or broadcast will be a much more effective and appropriate form of communication service but the majority are dynamic specific situations and consequently great service opportunities are lost. C-Cast was based on two main competence areas: creation of context awareness and multicasting technologies. Context information defines groups that demand the same information or service. These services are delivered efficiently by multicasting bearers.

PROJECT RESULTS

- C-Cast developed a framework for extracting information based on the context through the use of sensors (such as those used in mobile phones, etc.) in order to ensure that multicast innovative services meet the needs of the users:
- Created a common architecture that added context, advanced management and group-multicast transmission including: models and ontologies for representing context; a mechanism that allows information to infer multicast group; and a mechanism for exchanging information based on context between different content providers;
- Created mechanisms for increasing the network efficiency by exploiting information based on context and a proposal for the extension of the context in MBMS multicast and DVB-H;
- Developed a system concept for the creation and distribution of content whichadapts autonomously and enters information according to the context of each group;
- Created a common platform that will support multicast services based on context heterogeneous networks;
- Clarified the needs of the users related to components and multicast;
- Ensured the commercial viability of mobile broadcasting by developing and analysing new business models for context-based multicast and broadcast services;
- Contributed to the creation of standards (e.g., 3GPP, OMA and W3C).



provide an end-to-end context-aware communication framework



TELECOM ITALIA S.P.A - Italy

HUTCHISON WHAMPOA (EUROPE) LIMITED - United Kingdom

DEUTSCHE WELLE - Germany

BIGBAND NETWORK LTD - Israel

MOTOROLA SAS - France

FRAUNHOFER-GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V - Germany

INSTITUTO DE TELECOMUNICAÇÕES - Portugal

UNIVERSITAET ST. GALLEN - Switzerland

UNIVERSITY OF THE WEST OF ENGLAND, BRISTOL - United Kingdom

STIFTUNG FACHHOCHSCHULE OSNABRUECK - Germany

TECHNISCHE UNIVERSITAET KAISERSLAUTERN - Germany

UNIVERSITY OF CYPRUS - Cyprus

COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES - France

IBM ISRAEL - SCIENCE AND TECHNOLOGY LTD - Israel

CLOUDCATALYST

Reenergize Productivity, Efficiency and Competitiveness of European Economy Through Cloud Computing

INFORMATION

Contract Number

612053

Theme

ICT

Instrument

CSA-SA

Total Cost

688.600 €

EC Contribution

615.000 €

Coordinator EC Contribution

183.818 €

Project Start Date

01-Oct-13

Scientific Coordinator

Andreia Jesus (andreia-jesus@telecom.pt)

PT COMUNICAÇÕES, S.A.
R. Andrade Corvo 6
1050-009 LISBOA

Duration

24 Months

Project Website www.cloudcatalyst.eu

ABSTRACT (Project Objectives & Description of Work)

CloudCatalyst is an ambitious project that aims to provide clear benefits for European businesses, public entities, ICT providers and other Cloud stakeholders eager to develop and use cloud solutions.

The main reasons leading to the realization of this project are the following:

- Cloud computing adoptation will contribute to increasing the competitiveness of EU economy;
- The challenges of cloud computing expansion offer huge entrepreneurial opportunities;
- Partners launched successful cloud initiatives and reached a fast network of stakeholders.

CloudCatalyst aims to increase the awareness of Cloud Computing benefits in the European economy. To ensure project sustainability and increase the impact of its actions, several target groups will be involved:

- The main stakeholders are entrepreneurs aiming at developing new Cloud Computing services or products (from the supply side);
- As indirect targets, incubators, who act as a product or service development catalysts, are also very important players in the context of this project.

PROJECT RESULTS

CloudCatalyst will develop a support service to help entrepreneurs, researchers and software developers to create value-added Cloud products and services. The tools to be made available are the following:

- Cloud accelerator toolbox;
- Go-to-the-Cloud service: strategic planning for cloud adoption and external environment analysis;
- Analysis of major cloud trends in key industries and critical success factors to overcome technical challenges for cloud expansion.

Cloud **()**Catalyst

CLOUD

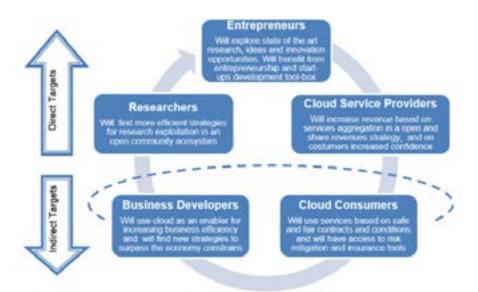
Cloud Accelerator Toolbox

Knowledge and Innovation

Go-to-the-Cloud Support Service Dissemination Conferences and Bootcamps

Critical

STRONGER EUROPEAN CLOUD COMPUTING INDUSTRY



PARTNERS

UNIVERSIDAD COMPLUTENSE DE MADRID – Spain

SI.MOBIL D.D. - Slovenia

EUROCLOUD EUROPE ASBL - Luxembourg

UPTEC - ASSOCIAÇÃO DE TRANSFERÊNCIADE TECNOLOGIA DA ASPRELA - Portugal

CLOUD-TM

A Novel Programming Paradigm for Cloud Computing

INFORMATION

Contract Number

257784

Theme

ICT

Instrument

CP-FP-INFSO

Total Cost

2.476.560 €

EC Contribution

1.700.000 €

Coordinator EC Contribution

507.340 €

Project Start Date

01-Jun-10

Scientific Coordinator

Paolo Romano

(romanop@gsd.inesc-id.pt)

INESC ID – INSTITUTO DE ENGENHARIA DE SISTEMAS E COMPUTADORES, INVESTIGAÇÃO E DESENVOLVIMENTO EM LISBOA Rua Alves Redol, 9 1000-029 LISBOA

Duration

39 Months

Project Website www.cloudtm.eu

ABSTRACT (Project Objectives & Description of Work)

Cloud Computing promises very compelling benefits for both cloud consumers and cloud services providers, by shifting data and computation away from local servers towards very large scale, world-wide spread data centers.

However, the promise of infinite scalability catalyzing much of the recent hype about Cloud Computing is still menaced by one major pitfall: the lack of programming paradigms and abstractions capable of bringing the power of parallel programming into the hands of ordinary programmers.

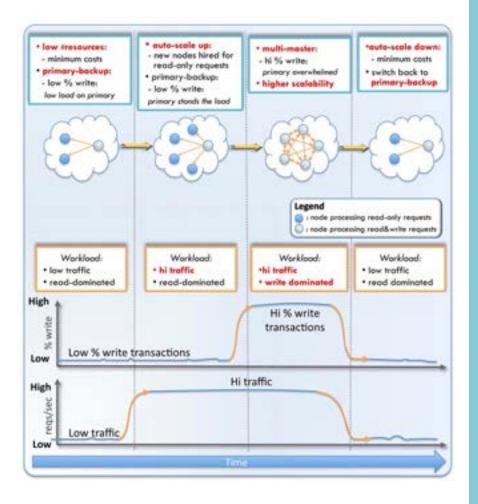
This project addressed precisely this issue by developing Cloud-TM (Transactional Memory), a self-optimizing middleware platform aimed at simplifying the development and administration of applications deployed on large scale Cloud Computing infrastructures.

PROJECT RESULTS

- Transaction-centric programming paradigm defined a friendly programming model for large scale distributed applications with familiar notion of atomic transaction as a first-class programming language construct. This spares programmers from the burden of implementing low level, error-prone mechanisms (e.g. distribution, persistence and fault-tolerance) attaining major reductions of the development process cost;
- Minimizing Costs minimizing the monitoring and administration costs by automating the provisioning of resources from the cloud based on user specified target criteria in terms of both Quality of Service and budget;
- Maximizing Scalability maximizing the scalability and efficiency (i.e. the
 costs/benefits ratio in the Cloud Computing usage-based pricing model)
 of the user-level services by self-tuning the middleware's internal
 mechanisms to ensure optimal performance in face of fluctuations of
 the number of allocated resources and of the workload characteristic.

CONSORZIO INTERUNIVERSITARIO NAZIONALE PER L'INFORMATICA - Italy ALGORITHMICA SRL - Italy RED HAT LIMITED - Ireland





CODIV

Enhanced Wireless Communication Systems Employing Cooperative Diversity

INFORMATION

Contract Number

215477

Theme

ICT

Instrument

CP-FP-INFSO

Total Cost

4.833.024 €

EC Contribution

3.352.132 €

Coordinator EC Contribution

778.135 €

Project Start Date

01-Jan-08

Scientific Coordinator

Atilio Gameiro (amg@det.ua.pt)

INST. DE TELECOMUNICAÇÕES
Instituto Superior Técnico,
Torre Norte - Piso 10
Av. Rovisco Pais, 1
1049-001 LISBOA

Duration

34 Months

Project Website www.ict-codiv.eu

ABSTRACT (Project Objectives & Description of Work)

The CODIV project aimed at researching, developing and validating radio technologies by exploiting channel diversity and cooperation between users. It targeted three major goals:

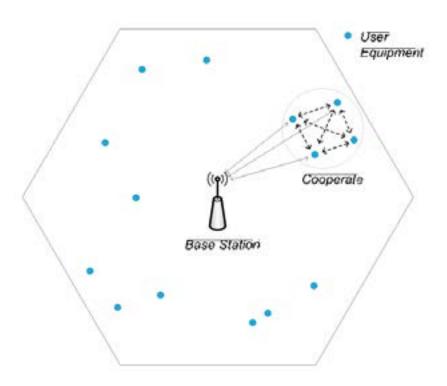
- enable the high bit rates targeted in the broadband component of future wireless systems;
- improve the power and spectrum efficiencies of existing wireless systems;
- improving and extend coverage and fairness.

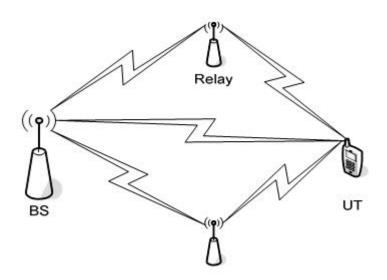
The CODIV project targeted the evolutions of cellular networks and WMAN's, and was thus fully aligned in this aspect with the objectives of the European Union to promote the integration of fixed and mobile communications systems.

PROJECT RESULTS

- System Concept: the main achievements were a clear definition of scenarios and system model to augment a cellular system through cooperative relaying;
- Algorithmic development: several competitive algorithms were developed and evaluated;
- Proof of concept: encompasses system level evaluation and laboratory prototyping;
- Business analysis: the main achievements are the final analysis of the impact of CODIV techniques on deployment and business models of cellular networks;
- Dissemination: the main achievements were the continuous dissemination to the scientific community and contribution to standardization bodies.







TELEFONICA INVESTIGACION Y DESARROLLO SA - Spain

MITSUBISHI ELECTRIC R&D CENTRE EUROPE B.V. - Netherlands

RUNCOM TECHNOLOGIES LTD - Israel

JAYTECH SOLUTIONS LDA - Portugal

COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES - France

CSEM CENTRE SUISSE D'ELECTRONIQUE ET DE MICROTECHNIQUE SA - RECHERCHE ET DEVELOPPEMENT - Switzerland

UNIVERSITATEA TEHNICA CLUJ-NAPOCA - Romania

WAVECOM SOLUCOES RADIO LIMITADA - Portugal

COGEU

Cognitive Radio Systems for Efficient Sharing of TV White Spaces in European Context

INFORMATION

Contract Number

248560

Theme

ICT

Instrument

CP-FP-INFSO

Total Cost

5.572.816 €

EC Contribution

3.648.365 €

Coordinator EC Contribution

593.205 €

Project Start Date

01-Jan-10

Scientific Coordinator

Paulo Marques Coelho (pmarques@av.it.pt)

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Instituto Superior Técnico,
Torre Norte - Piso 10
Av. Rovisco Pais, 1
1049-001 LISBOA

Duration

36 Months

Project Website www.ict-cogeu.eu

ABSTRACT (Project Objectives & Description of Work)

COGEU is a composite of technical, business, and regulatory/policy domains, with the objective of taking advantage of the TV digital switch-over (or analog switch-off) by developing cognitive radio systems that leverage the favorable propagation characteristics of TV White Spaces (TVWS) through the introduction and promotion of real-time secondary spectrum trading and the creation of new spectrum commons regime. COGEU will also define new methodologies for TVWS equipment certification and compliance addressing coexistence with the Digital Video Broadcasting - Terrestrial/Handheld (DVB-T/H) European standard.

PROJECT RESULTS

At the technical level the project achieved the following results: (i) design, implement and demonstrate enabling technologies based on cognitive radio to support mobile applications over TVWS for spectrum sharing business models; (ii) quantify the impact of TVWS devices on DVB-T receivers and define methodologies for TVWS equipment certifications and compliance in the European regulatory context.

At the business models level, the project was able to investigate business models enabling innovative wireless services which increase spectrum utilization through the exploitation of TVWS based on spectrum commons and secondary market regimes.

At the regulatory/policy level, the project: (i) defined spectrum policies and etiquette rules to promote fairness and avoid the tragedy of the commons in case of unlicensed spectrum usage, and monopolization in case of the secondary spectrum market usage; (ii) analysed the dynamics of bandwidth sharing and pricing in a spectrum market environment of TVWS under QoS and regulatory constraints.







TRINITY COLLEGE DUBLIN - Ireland

THALES COMMUNICATIONS & SECURITY SAS - France

ROHDE & SCHWARZ GMBH&CO KOMMANDITGESELLSCHAFT - Germany

PORTUGAL TELECOM INOVAÇÃO SA - Portugal

SIGINT SOLUTIONS LTD - Cyprus

POZNAN UNIVERSITY OF TECHNOLOGY - Poland

UNIVERSITY OF THE AEGEAN-RESEARCH UNIT - Greece

INSTITUT FUER RUNDFUNKTECHNIK GMBH - Germany

TOWERCOM AS - Slovakia

CRS-i

Cognitive Radio Standardization-Initiative - From FP7 Research to Global Standards

INFORMATION

Contract Number

318563

Theme

ICT

Instrument

CSA-CA

Total Cost

1.252.647 €

EC Contribution

907.000 €

Coordinator EC Contribution

205.456 €

Project Start Date

01-Nov-12

Scientific Coordinator

Paulo Marques (pmarques@av.it.pt)

INST. DE TELECOMUNICAÇÕES
Instituto Superior Técnico
Torre Norte - Piso 10
Av. Rovisco Pais 1
1049-001 LISBOA

Duration

36 Months

Project Website http://www.ict-crsi.eu/

ABSTRACT (Project Objectives & Description of Work)

Research into cognitive radio (CR) systems has matured and many FP7 projects and initiatives have provided proof of concept implementations, demonstrators and showcases. But, to date, there are only few standards that may be used as benchmark for the type approval or the certification of the operation of CR equipment and they are rather incomplete and fairly fragmented.

Within this perspective, the scope of Cognitive Radio Standardization initiative (CRS-i) is to coordinate and support existing and future EU framework projects and to facilitate the exploitation of their results by establishing a concentrated approach to Cognitive Radio Systems standardisation. This also includes removing barriers and ensuring the efficient participation of EU research in the global CR standardization process. The proposed Coordination Action has the following three strategic objectives:

- Provide a consultancy service on standadization to EU framework projects addressing Cognitive Radio, Dynamic Spectrum Access and Coexistence issues, as a tool to facilitate the pull through of EU research results from concept to invention, including an actiive contributing to the writing of standards;
- Extend and coordinate standardization activities of the ongoing FP7
 ICT projects beyond their lifetime, namely QoSMOS, COGEU, SACRA and OneFIT;
- Reinforce the collaboration of FP7 projects with USA and Japan's "cognitive radio stakeholders" and ensure that Europe will be able to turn the research outcomes into standard compliant products.

PROJECT RESULTS

To achieve the above objectives, CRS-i will utilize and implement a range of instruments, most notably the creation of a CRS project cluster within the Radio Access and Spectrum cluster (RAS), as a forum in which synergies and standardization priorities among EU framework projects are identified and facilitated.

COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES – France

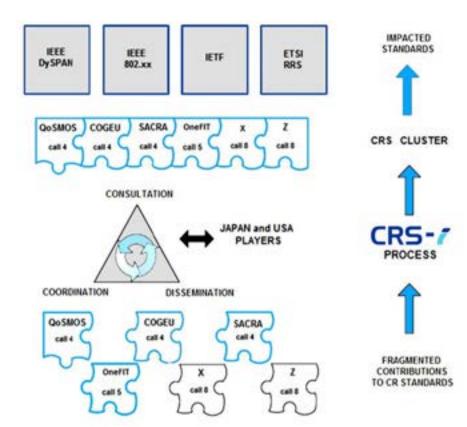
UNIVERSITY OF SURREY - United Kingdom

NOKIA SIEMENS NETWORKS MANAGEMENT INTERNATIONAL GMBH – Germany

NEC TECHNOLOGIES (UK) LIMITED - United Kingdom

IMINDS VZW - Belgium





EAR-IT

Experimenting Acoustics in Real Environments Using Innovative Test-Beds

INFORMATION

Contract Number

318381

Theme

ICT

Instrument

CP-FP-INFSO

Total Cost

1.878.070 €

EC Contribution

1.450.000 €

Coordinator EC Contribution

344.978 €

Project Start Date

01-Oct-12

Scientific Coordinator

Pedro Maló

(pmm@uninova.pt)

UNINOVA - INSTITUTO DE
DESENVOLVIMENTO
DE NOVAS TECNOLOGIAS
Campus da FCT/UNL
Monte de Caparica
2829-518 CAPARICA

Duration

24 Months

Project Website www.ear-it.eu

ABSTRACT (Project Objectives & Description of Work)

The EAR-IT project revolved around four main objectives: assessing and enhancing Future Internet Research and Experimentation (FIRE) test-beds' for acoustics; validating and improving acoustic methods for use in disparate real-life environments; study and defining the best ways to integrate intelligent acoustic sensing solutions into smart-environments' operating platforms; and thoroughly investigate privacy issues and users' concerns that hinder the full widespread adoption of acoustic sensing.

PROJECT RESULTS

The EAR-IT project worked on the existing challenges of using acoustic sensing in smart cities and intelligent buildings. The project carried out experimental activities in the city of Santander (Spain) – smart cities - and in Geneva - intelligent buildings. The focus was on applications improving security, energy saving, traffic management and others. The project conducted a large-scale 'real-life' experimentation of intelligent acoustics for supporting high social value applications fostering innovation and sustainability in two outstanding FIRE test-beds: FP7 projects SmartSantander and Hobnet.

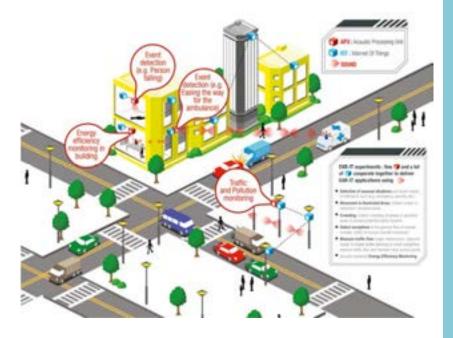
The project provided methods for the assesment and benchmarking for Internet of Things (IoT) deployments for acoustics as well as new acoustic hardware for testbeds. EAR-IT also provided a set of well-tested and duly validated acoustic sensing and processing methods.

Moreover, EAR-IT provided guidance for other users and implementers to adopt intelligent acoustic sensing solutions on IoT deployments via the definition of a service platform model and user interfaces of reference.

And finally, EAR-IT made avaliable a practical tool to enable an easier evaluation of the risks related to audio monitoring deployment as well as a list of potential measures to mitigate the risks of audio monitoring breaching privacy rights and uphold users' confidence in acoustic sensing.



EAR-IT the sounds of smart environments





DISTRIBUTED
ACOUSTIC
SENSING AND
DELIVERY OF HIGH
SOCIETAL VALUE
APPLICATIONS



QUALIFY AND BENCHMARK TEST-BEDS FOR ACQUISTICS IN DEPLOYMENT OF TARGETED APPLICATIONS



INTELLIGENT ACOUSTIC SOLUTIONS FOR LARGE-SCALE SENSOR NETWORKS



ADOPTION OF USER - AND MARKET-ACCEPTED INTELLIGENT ACOUSTICS SOLUTIONS FRAUNHOFER-GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V – Germany

EASY GLOBAL MARKET SAS - France

MANDAT INTERNATIONAL ALIAS FONDATION POUR LA COOPERATION INTERNATIONALE – Switzerland

UNIVERSIDAD DE CANTABRIA - Spain

LULEA TEKNISKA UNIVERSITET – Sweden

WUXI SMART SENSING STARS COMPANY LTD - China

ENPROVE

Energy Consumption Prediction with Building Usage Measurements for Software-Based Decision Support

INFORMATION

Contract Number

248061

Theme

ICT

Instrument

CP-FP-INFSO

Total Cost

3.683.629 €

EC Contribution

2.499.918 €

Coordinator EC Contribution

310.560 €

Project Start Date

01-Fev-10

Scientific Coordinator

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UNINOVA - INSTITUTO DE DESENVOLVIMENTO

DE NOVAS TECNOLOGIAS

Campus da FCT/UNL

Monte de Caparica

2829-516 CAPARICA

Duration

39 Months

Project Website www.enprove.eu

ABSTRACT (Project Objectives & Description of Work)

The objective of the EnPROVE project is to develop a software tool for predicting the energy consumption of a specific building, with different scenarios implementing energy-efficient technologies. This assessment is done based on actual measured performance and usage data of the building itself.

The key hypothesis of EnPROVE is that it is possible, from adequately gathering and assessing data on how a structure performs and is being used from an energy viewpoint, to build highly accurate and specific energy consumption models relevant for prediction of alternative scenarios.

These models are then used to support decision making on investments.

PROJECT RESULTS

The EnPROVE software tools assess the energy-efficiency impact of alternative technologies for which available investment resources can be directed and thus can support the decision maker finding the optimized set of energy-efficient solutions to be implemented.

Compared to current available energy auditing services and prediction tools, EnPROVE increases the cost-effectiveness of renovation investments by 15% to 30%.

The application of the tools has been validated in two real buildings.







UNIVERSITY COLLEGE DUBLIN, NATIONAL UNIVERSITY OF IRELAND - Ireland

PHILIPS TECHNOLOGIE GMBH - Germany

CENTRE SCIENTIFIQUE ET TECHNIQUE DU BATIMENT - France

FUNDACION TECNALIA RESEARCH & INNOVATION - Spain

G.E.M. TEAM SOLUTIONS GDBR - Germany

MOSTOSTAL WARSZAWA SA - Polonia

GROUPE ARCHIMEN - France

PHILIPS ELECTRONICS NEDERLAND B.V. - Netherlands

ePAL

INFORMATION

Contract Number 215289

Theme ICT

Instrument

CSA-CA

Total Cost

1.120.124 €

EC Contribution

800.000 €

Coordinator EC Contribution

297.325 €

Project Start Date

01-Fev-08

Scientific Coordinator

Luis M. Camarinha-Matos (cam@uninova.pt)

UNINOVA - INSTITUTO DE

DESENVOLVIMENTO

DE NOVAS TECNOLOGIAS

Campus da FCT/UNL

Monte de Caparica

2829-516 CAPARICA

Duration

27 Months

Project Website www.epal.eu.com

ABSTRACT (Project Objectives & Description of Work)

The Project ePAL aimed to explore innovative ways to best facilitate the development of the active ageing process and to ensure an improved transition for the elderly citizen as they cope with the onset of ageing. In order to find appropriate ways towards this goal, a strategic RTD roadmap was proposed, focused on innovative solutions and ensuring a balanced post-retirement life-style.

The ePAL vision - addressing new levels of quality of life - consists of an effective transformation of the current situation regarding retirement and the barriers to active ageing in Europe by introducing new approaches and ways to create actively contributing professional communities in society.

PROJECT RESULTS

Given the lessons from early experiences of technological developments focused on older people and the sensitivity of the area, future RTD needs will be supported by carefully designed roadmaps. In this direction, results from ePAL offered a strategic RTD roadmap that considered not only advanced technological developments but also the needed social and organizational transformations.

Models and tools developed in the collaborative networks area have good potential but there was a need for the development of new technological solutions that took into account the specific needs of senior professionals. Besides a perspective of self-adaptivity/self-configurability, a particularly promising direction for the development of novel collaboration platforms and tools was the inclusion of affective computing elements. As such, a number of strategic development areas have been identified by the ePAL roadmapping project.

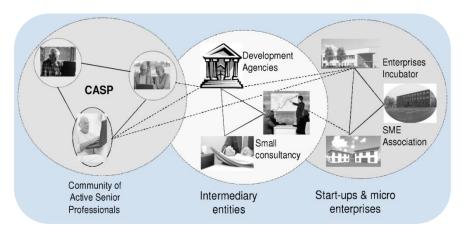
The systematic roadmapping process that is behind the proposed research agenda as well as the extensive validation process involving a large community of stakeholders were important factors for providing confidence in the adequacy of the proposed roadmap.

UNIVERSITEIT VAN AMSTERDAM -Netherlands SKILL ESTRATEGIA, S.L. - Spain

WHITE LOOP LIMITED - United kingdom

SENIORS ESPANOLES PARA LA COOPERACION TECNICA (SECOT) - Spain







AT 45, many people do not have a clear vision of what they'll be doing after they retire. And this scares them.

- Charles Feaver, Editor, YoungRetired.ca

EPILEPSIAE

Evolving Platform for Improving Living Expectation of Patients Suffering from Ictal Events

INFORMATION

Contract Number

211713

Theme

ICT

Instrument

CP-FP-INFSO

Total Cost

4.328.065 €

EC Contribution

2.919.805 €

Coordinator EC Contribution

505.186 €

Project Start Date

01-Jan-08

Scientific Coordinator

António Dourado Correia (dourado@dei.uc.pt)

UNIVERSIDADE DE COIMBRA FAC. DE CIÊNCIAS E TECNOLOGIA DEP. ENG. INFORMÁTICA R. SÍlvio Lima, Pólo II 3030-790 COIMBRA

Duration

48 Months

Project Website www.epilepsiae.eu

ABSTRACT (Project Objectives & Description of Work)

Epilepsy is a neurological disorder affecting millions of people worldwide, submitted to the apparently unforeseen occurrence of epileptic seizures, anytime, anywhere. A seizure affects the brain's normal functions and produces changes in a person's movement, behavior or consciousness.

The EPILEPSIAE project aimed at developing technology for brain-computer interaction in conjunction with ICT techniques to predict incoming seizures, empowering the epileptic patients to monitor their own risks and improve their safety in daily life and strengthening their social integration.

PROJECT RESULTS

The project EPILEPSIAE developed software, hardware and wireless devices:

- BRAINATICS, a prototype of a transportable system (acquisition device and notebook) that records EEG data, predicts epileptic seizures and warns the patient;
- The European Epilepsy Database with long term multichannel EEG records of 275 patients, with documented metadata, several extracted features from the raw EEG signals and several computational intelligence classifiers (http://epilepsy-database.eu/);
- EPILAB, a public software in Matlab environment, for extration of features, design and evaluation of predicting algorithms (http://epilepsiae.eu/DownloadEpilab).





CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE - France

ALBERT-LUDWIGS-UNIVERSITAET FREIBURG - Germany

MICROMED S.P.A. - Italy

UNIVERSITAETSKLINIKUM FREIBURG -Germany

HOSPITAIS DA UNIVERSIDADE DE COIMBRA - Portugal

EuConNeCts

European Conferences on Networks and Communications (EuCNC)

INFORMATION

Contract Number

619470

Theme

ICT

Instrument

CP-CSA

Total Cost

348.425 €

EC Contribution

280.000 €

Coordinator EC Contribution

32.128 €

Project Start Date

01-Oct-2013

Scientific Coordinator

Luís M. Correia (luis.correia@inov.pt)

INOV, INESC INOVAÇÃO

Rua Alves Redol 9

1000-029 LISBOA

Duration

24 Months

Project Website www.eucnc.eu

ABSTRACT (Project Objectives & Description of Work)

It is the purpose of EuConNeCts to organise the 2014 and 2015 editions of the EC sponsored conference in the area of communication networks and systems, named EuCNC - European Conference on Networks and Communications. EuCNC serve as technical and scientific conferences for European and other researchers to show and discuss their work in the area of Telecommunications, namely on communication networks and systems, including services and applications.

Though focusing on European reserachers, these conferences also aim at attracting others from all over the world. They will also serve as a showcase for the work developed by projects co-financed by the EC, namely those in the area of Pervasive and Trusted Network and Service Infrastructures, and more specifically those addressing Future Networks as well as in the area of communication networks and systems at large.

PROJECT RESULTS

EuCNC are European conferences with a large international dimension. They showcase the R&D activities performed within EC programmes, they bridge between academia / research centres and industry and they provide a forum for the presentation of state-of-the-art technology, in both theoretical and experimental forms.



European Conference on Networks and Communications J Bologna, Italy







C2B CONGRESS SARL - France

CONSORZIO NAZIONALE INTERUNIVERSITARIO PER LE TELECOMUNICAZIONI - Italy

NOVABASE BUSINESS SOLUTIONS - Portugal

ECOLE SUPÉRIEURE D'ÉLECTRICITÉ - France

FUTON

Fibre Optic Networks for Distributed and Extendible Heterogeneous Radio Architectures

INFORMATION

Contract Number

215533

Theme

ICT

Instrument

CP-IP

Total Cost

9.786.478 €

EC Contribution

6.575.330 €

Coordinator EC Contribution

548.862 €

Project Start Date

01-Jan-08

Scientific Coordinator

Paulo Monteiro

(Paulo.1.monteiro@nsn.com)

NOKIA SIEMENS NETWORKS

PORTUGAL, S.A.

R. Irmãos Siemens, 1 – 1-A

2720-093 AMADORA

Duration

33 Months

Project Website www.ict-futon.eu

ABSTRACT (Project Objectives & Description of Work)

The FUTON project aimed to research, develop and validate a flexible architecture for wireless systems based on the joint processing of the radio signals from distinct remote antenna units and supported by a transparent fiber infrastructure. This architecture will enable the high bit rates targeted in the broadband component of future wireless systems and will provide a framework for the integration of heterogeneous wireless system.

The objective was also to specify, design, implement and provide proof of concept for a hybrid optical-radio infrastructure enabling the high bit rates envisioned for 4G.

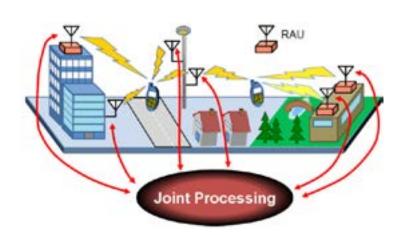
PROJECT RESULTS

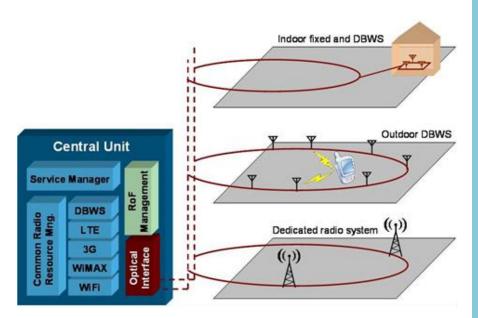
The FUTON project has developed and validated a novel distributed antenna system which relies on radio over fiber transport and centralized processing. During the project, several technical developments have been carried out in order to demonstrate the feasibility of the FUTON concept. The FUTON project exploited the potentialities offered by the infrastructure to develop mechanisms for inter-system coordination and optimum usage of radio resources and also provided the proof of concept.

FUTON also evaluated the implications of the new concept on the current wireless architecture models.

The FUTON concept will bring new business models and it will promote competition and the entry of new players in the telecom market, paving the way for an open and competitive digital economy.







INSTITUTO DE TELECOMUNICACOES - Portugal

III V LAB GIE - France

MOTOROLA SAS - France

PORTUGAL TELECOM INOVACAO SA - Portugal

VIVO SA - Brazil

HELLENIC TELECOMMUNICATIONS ORGANIZATION S.A. - OTE AE (ORGANISMOS TILEPIKOINONION TIS ELLADOS OTE AE) - Greece

ACORDE TECHNOLOGIES S.A. - Spain

JAYTECH SOLUTIONS LDA - Portugal

SIGINT SOLUTIONS LTD - Cyprus

UNIVERSITY OF KENT - United Kingdom

UNIVERSITY OF PATRAS - Greece

TECHNISCHE UNIVERSITAET DRESDEN - Germany

AALBORG UNIVERSITET - Denmark

TEKNOLOGIAN TUTKIMUSKESKUS VTT - Finland

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY -Japan

WAVECOM SOLUCOES RADIO LIMITADA - Portugal

COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES - France

NOKIA SIEMENS NETWORKS GMBH & CO. KG - Germany

Holographic Integrated Display and Optics

INFORMATION

Contract Number 618081

Theme ICT

Instrument

CP-FP-INFSO

Total Cost

1.647.687 €

EC Contribution

1.263.243 €

Coordinator EC Contribution

765.337 €

Project Start Date

01-Nov-2013

Scientific Coordinator

Ivo Vieira

(ivieira@lusospace.com)

LUSOSPACE - PROJECTOS DE ENGENHARIA LDA. Rua de São Caetano 16 1200-829 LISBOA

Duration

26 Months

Project Website www.lusospace.com/hido/

ABSTRACT (Project Objectives & Description of Work)

The possibility to create an augmented reality vision has been investigated since the 1960's. Most augmented reality systems require the use of a Head Mount Display (HMD) to project a virtual image in the user's eyes. To date, no HMD featuring good field of view, good resolution and small dimensions has been developed. This has been one of the major bottlenecks to create an augmented reality market. Although several interesting concepts emerged during the last years (Google Glass project is a recent example), all of those rely on a display decoupled from the optical system. This creates constraints on the mechanical configuration of the eyewear which increases volume and mass. Moreover, those systems have difficulties to cope with corrective vision requirements of a significant part of the users.

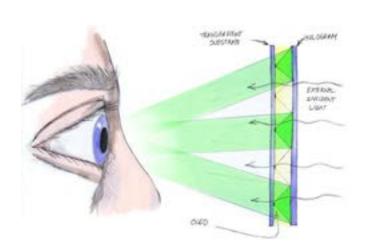
The proposed project brings forth a completely disruptive solution using an innovative optical design where the display and the optical system are merged together in a single lens. This opens a new paradigm in the design of a HMD:

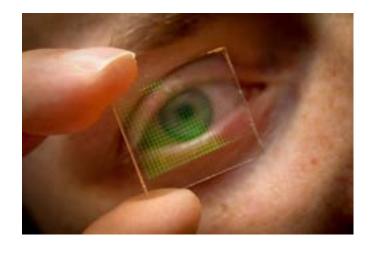
- it decreases the mass and the volume of the system;
- it allows a very large field of view;
- it opens room for fashion and variable designs without any severe geometrical constrain;
- it allows integrating correction optics inside the HMD lens;
- it creates the possibility to use the traditional eyewear market to leverage the augmented reality market (similar design, similar distribution configuration, similar customization).

PROJECT RESULTS

The proposed design will use the most advanced technologies in optics, holography and OLED (Organic Light Emitting Diodes) displays and integrate them in a single piece. This Lensplay (lens and display in one single physical element) will open up complete new ways for humans to interact with information computers. It will be a breakthrough that will ultimately change how the world sees itself.

COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES - France RVH TECHNOLOGY LIMITED – United Kingdom





KARYON

INFORMATION

Contract Number

288195

Theme

ICT

Instrument

CP-FP-INFSO

Total Cost

3.727.388 €

EC Contribution

2.739.958 €

Coordinator EC Contribution

454.399 €

Project Start Date

01-Oct-11

Scientific Coordinator

Antonio Casimiro (casim@di.fc.ul.pt)

FUNDAÇÃO DA FACULDADE DE CIÊNCIAS DA UNIVERSIDADE DE LISBOA Campo Grande, edif. C1, 3° piso 1749-016 LISBOA

Duration

36 Months

Project Website www.karyon-project.eu

ABSTRACT (Project Objectives & Description of Work)

There are many benefits in having autonomous and cooperative vehicles, for example, unmanned aerial vehicles or cooperative smart cars, which could operate efficiently in stringent conditions, such as the monitoring of ash clouds emitted by volcanos or in fast and dense traffic. However, existing approaches to system design did not provide sufficient guarantees that such vehicles could operate safely in public roads and air space.

KARYON addressed the problem of finding robust operating strategies for vehicles, which dynamically adjust performance to ensure safety based on actual operational conditions. Specifically, the vehicles estimate the confidence on the information they collect from a variety of sources, including other vehicles, and dependably adjust their behaviour based on that estimation.

KARYON aimed at defining a system architecture based on a small local safety kernel that would prevent dangerous behaviour. Being a very small subsystem (compared to the overall complex control system), its predictability can be justified, guaranteeing overall safety with respect to a set of safety rules.

PROJECT RESULTS

The project provided the KARYON generic architecture, which allows system designers to build specific architectures that embody the KARYON approach and its benefits, namely achieving increased efficiency without jeopardizing safety, supported by the trusted local safety kernel.

KARYON also defined an abstract sensor model to deal with sensor faults, which provides the validity of the sensor data along with the data. This validity information is then considered by the safety kernel on each vehicle, which dependably transitions the vehicle between different levels of service in reaction to changing conditions and faults affecting the sensor data and the quality of environmental perception.

The project also developed innovative mechanisms to enhance the dependability and timeliness of wireless communication, and respective middleware and test tools. Proof-of-concept prototypes (e.g., a mixedreality UAV simulator and real miniature cars) were developed and evaluated, validating the KARYON architecture and the general approach.

OTTO-VON-GUERICKE-UNIVERSITAET MAGDEBURG - Germany

CHALMERS TEKNISKA HOEGSKOLA AB - Sweden

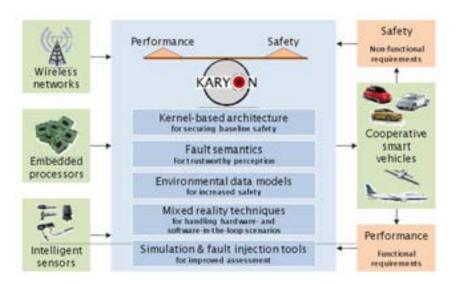
GMVIS SKYSOFT SA - Portugal

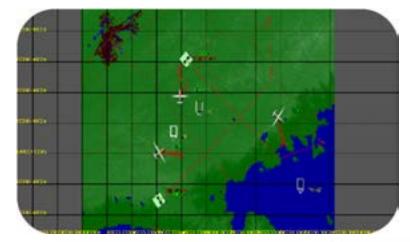
EMBRAER SA - Brazil

SP SVERIGES TEKNISKA FORSKNINGSINSTITUT AB - Sweden

4S-SISTEMI SICURI E SOSTENIBILI SRL - 4S SRL - Italy









K-NET

Services for Context Sensitive Enhancing of Knowledge in Networked Enterprise

INFORMATION

Contract Number

215584

Theme

ICT

Instrument

CP-FP-INFSO

Total Cost

1.999.369 €

EC Contribution

1.485.177 €

Coordinator EC Contribution

401.650 €

Project Start Date

01-Dec-07

Scientific Coordinator

Rui Neves-Silva (rns@fct.unl.pt)

UNINOVA - INSTITUTO DE
DESENVOLVIMENTO
DE NOVAS TECNOLOGIAS
Campus da FCT/UNL
Monte de Caparica
2829-516 CAPARICA

Duration

36 Months

Project Website http://sites.uninova.pt/icontrol/k-net

ABSTRACT (Project Objectives & Description of Work)

The objective of the K-NET project was to explore the following fundamental problem: how different services to manage social interactions in a networked enterprise can be used to enhance knowledge and knowledge management (KM) services.

The key hypothesis of the K-NET project is that the context under which knowledge is collectively generated and managed can be used to enhance this knowledge for its further use within intra-enterprise collaboration. By extracting the context under which the knowledge is generated in a network (e.g. goals, teams, temporal and spatial aspects), it is possible to enrich it in order to be more effectively used within future work.

PROJECT RESULTS

The project answered several problems:

- how to efficiently monitor/trace a process of generation/usage of knowledge in the network so that this knowledge can be re-used for future work;
- how to extract context from this process;
- and how to enrich the knowledge generated with extracted context to support knowledge sharing in future network activities.

By solving these problems, K-NET developed new services to:

- manage social interactions allowing networked enterprises to effectively monitor the (collaborative) knowledge generation/usage processes;
- automatically extract context from such processes and enrich the knowledge;
- as well as KM services and applying the extracted context to support reuse of this knowledge in the network.

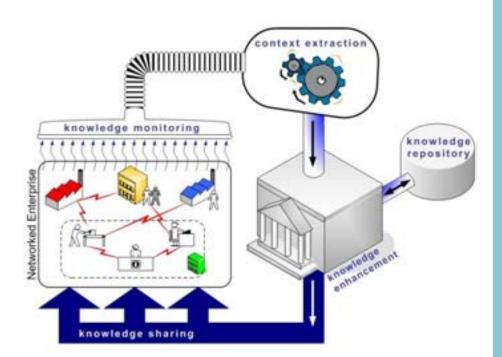
INSTITUT FÜR ANGEWANDTE SYSTEMTECHNIK BREMEN GMBH -Germany

NATIONAL UNIVERSITY OF IRELAND - Ireland

MB AIR SYSTEMS LIMITED - United kingdom

OAS AKTIENGESELLSCHAFT - Germany
INAEL ELECTRICAL SYSTEMS SA - Spain







LIFESAVER

Context Sensitive Monitoring of Energy Consumption to Support Energy Savings and Emissions Trading in Industry

INFORMATION

Contract Number 287652

Theme ICT

Instrument

CP-FP-INFSO

Total Cost **2.806.674 €**

EC Contribution

2.038.947 €

Coordinator EC Contribution

446.320 €

Project Start Date
01-Dec-11

Scientific Coordinator

Rui Neves-Silva (rns@fct.unl.pt)

UNINOVA - INSTITUTO DE
DESENVOLVIMENTO
DE NOVAS TECNOLOGIAS
Campus da FCT/UNL
Monte de Caparica
2829-516 CAPARICA

Duration

36 Months

Project Website www.lifesaver-fp7.eu

ABSTRACT (Project Objectives & Description of Work)

The LifeSaver project aimed at supporting industrial companies in optimising the energy performance of their operations. This support will be in the form of a set of ICT building blocks that combine context awareness, ambient intelligence monitoring and standard energy consumption data measurement.

Industrial processes are increasingly complex and flexible, leading to highly dynamic energy usage patterns. To cope with such dynamics of energy patterns and to enable an efficient energy management in manufacturing processes, LifeSaver aimed at complement currently measured energy consumption data with diverse information from ambient intelligent systems (e.g., interactions between human operators and machines or processes) and process-related measurements.

The main objective is to enrich energy consumption data with information about the context in which the use actually occurred to build up energy models and then use them to support decision making in different time-frame scenarios.

PROJECT RESULTS

The LifeSaver project provided:

- comprehensive information about the energy consumption to be processed in enterprise management systems, for the purpose of achieving significant energy savings;
- a knowledge-based decision support system for optimisation of energy performance of operations;
- appropriate (almost) online and predicted cumulative data on the CO₂
 emissions, as input for the decision support services to enable emission
 trading across industries and among companies.

Three demonstrators of the platform's application in real industrial environment, and their usage for new business models, will be provided.



INSTITUT JOZEF STEFAN - Slovenia

SOLVERA LYNX NOVE TEHNOLOGIJE ZA ENERGETIKO DD - Slovenia

J.W. OSTENDORF GMBH & CO. KG - Germany

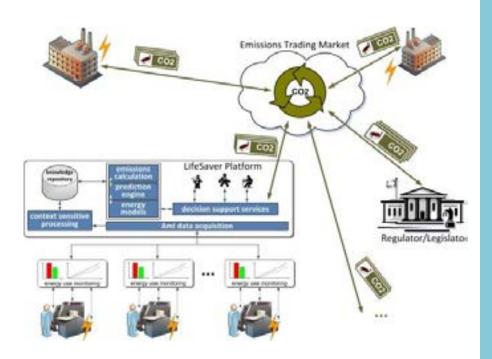
OAS AKTIENGESELLSCHAFT - Germany

SALONIT ANHOVO GRADBENI MATERIALI D.D. - Slovenia

AGÊNCIA MUNICIPAL DE ENERGIA DO SEIXAL ASSOCIAÇÃO - Portugal







MOnarCH

Multi-Robot Cognitive Systems Operating in Hospitals

INFORMATION

Contract Number

601033

Theme

ICT

Instrument

CP-FP-INFSO

Total Cost

4.426.216 €

EC Contribution

3.319.753 €

Coordinator EC Contribution

360.625 €

Project Start Date

01-Feb-13

Scientific Coordinator

João Sequeira (joao.silva.sequeira@tecnico.ulisboaist.utl.pt)

IST-ID - ASSOCIAÇÃO DO
INST. SUPERIOR TÉCNICO
PARA A INVESTIGAÇÃO E
DESENVOLVIMENTO
Avenida Rovisco Pais 1
1049-001 LISBOA

Duration

36 Months

Project Website www.monarch-fp7.eu

ABSTRACT (Project Objectives & Description of Work)

The focus of the MOnarCH project is on social robotics using networked heterogeneous robots and sensors to interact with children, staff, and visitors, engaging in edutainment activities in the pediatric infirmary at the Portuguese Oncology Institute at Lisbon (IPOL), Portugal.

Besides being a realistic scenario, the ethical regulations enforced by IPOL for the pediatric ward introduce important constraints on the use of some technologies, representing a challenging research opportunity. Moreover, it is an environment where socially admissible interactions can be well framed and implemented within current state of the art technologies.

MOnarCH targets (i) the development of a novel framework to model mixed human-robot societies, and (ii) its demonstration using a network of heterogeneous robots and sensors, in the pediatric area of an oncological hospital. The robots will engage in edutainment activities and the uncertainties introduced by people and robots themselves shall be handled to yield natural interactions.

Innovation is expected mainly in (i) the modeling and analysis of the dynamics of social organizations, and social individuals, (ii) the mapping between such models and implementable systems, (iii) the integration between models related to social and asocial behaviors, (iv) the introduction of creative methods of interaction between people and robots, based on models of the dynamics of social organizations and individuals, and (v) the adaptation of robots to individuals and groups of people.

PROJECT RESULTS

Key properties of networked robot systems such as robustness and dependability are a major concern of the project. In addition, guidelines to translate the MOnarCH system to applications in hospital environments, and other scenarios sharing similarities with them, e.g., kindergarten, and personal assistance to elderly at home, will be delivered.

As an objective underlying the R&D work, the lessons learned during the project will be used to transition the obtained solutions to market and to create new ones.









OREBRO UNIVERSITY - Sweden

UNIVERSIDAD CARLOS III DE MADRID - Spain

NSTITUTO PORTUGUÊS DE ONCOLOGIA DE LISBOA FRANCISCO GENTIL EPE – Portugal

YDREAMS ROBOTICS SA – Portugal

SELFTECH - ENGENHARIA DE SISTEMAS E ROBÓTICA LDA — Portugal

IDMIND - ENGENHARIA DE SISTEMAS LDA - Portugal

ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE – Switzerland

UNIVERSITEIT VAN AMSTERDAM -Netherlands

MONET

Mechanisms for Optimization of Hybrid Ad-Hoc networks and Satellite Networks

INFORMATION

Contract Number **247176**

Theme ICT

Instrument

CP-FP-INFSO

Total Cost

3.596.013 €

EC Contribution

2.421.255 €

Coordinator EC Contribution

525.112 €

Project Start Date

01-Jan-10

Scientific Coordinator

André Oliveira

(andre.oliveira@tekever.com)

TEKEVER - TECNOLOGIAS DE INFORMAÇÃO, S.A. Rua das Musas, 3.30 1990-113 LISBOA

Duration

33 Months

Project Website www.ict-monet.eu

ABSTRACT (Project Objectives & Description of Work)

The concept of a hybrid MANET (Mobile wireless Adhoc Networks) Satellite network is a natural evolution of considering the problem of providing local and remote connectivity in a highly mobile, dynamic and often remote environment.

The objective of the MONET project was to study the challenges of such composite networks with particular focus on the following:

- Optimising network resources and link availability;
- Providing Quality of Service (QoS) and Quality of Experience (QoE);
- And minimizing costs and energy.

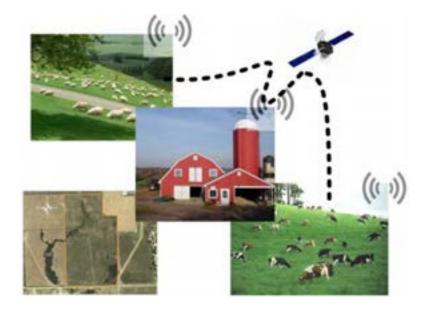
The research aimed at solving issues such as the re-organisation of MANET networks to connect to satellite access points, re-organisation of the satellite access points, selection of which satellite access points to use, the use of satellite as a relay between two MANET networks, the adjustment of routing in accordance with the current network situation and the exchange of cross layer information to improve resource management.

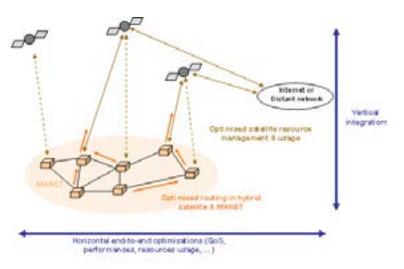
PROJECT RESULTS

Reaching the objectives of this project brought noteworthy added value to specific application scenarios (some of them well known as MANET applications):

- Providing remote access and broadband to rural or remote areas (helping to bridge the digital divide; collaborative work and e-business; everyday operations of large field teams; health services and telemedicine);
- Providing on-demand connectivity to airports and aircraft;
- Public Safety (providing emergency communications during/after disasters; forest fires, floods and earth-quakes and coastal monitoring).

MONET





+ Existing satellite link + - + Potential satellite link

PARTNERS

CONSORZIO PER LA RICERCA NELL' AUTOMATICA E NELLE TELECOMUNICAZIONI C.R.A.T. - Italy

UNIVERSITY OF SURREY - United Kingdom

INGENIERA DE SISTEMAS PARA LA DEFENSA DE ESPANA SA-ISDEFE - Spain

ASTRIUM SAS - France

Uprava RS za zašcito in reševanje, Ministrstvo za obrambo - Slovenia

PAPETS

Phonon-Assisted Processes for Energy Transfer and Sensing

INFORMATION

Contract Number

323901

Theme

ICT

Instrument

CP-FP-INFSO

Total Cost

2.503.347 €

EC Contribution

1.834.424 €

Coordinator EC Contribution

315.200 €

Project Start Date

01-Sep-13

Scientific Coordinator)

Yasser Omar

(yasser.omar@ist.utl.pt)

INST. DE TELECOMUNICAÇÕES
Instituto Superior Técnico
Torre Norte - Piso 10
Av. Rovisco Pais 1
1049-001 LISBOA

Duration

36 Months

Project Website www.quantumbiology.eu

ABSTRACT (Project Objectives & Description of Work)

There is mounting experimental and theoretical evidence that suggests that coherent electronic and vibrational dynamics are essential to understand physiological processes. This project addresses this newly emerging frontier between biology and quantum physics by aiming to determine the role of coherent vibrational dynamics in the efficiency of energy storage in natural and artificial light harvesting systems, as well as in odour recognition. Although these are at first sight two very different biological processes, in both cases their effectiveness is now believed to rely on phonon-assisted mechanisms. In fact, more generally, it is becoming increasingly clear that vibrational dynamics plays a key role in establishing the fundamental connection between structure and function of protein complexes. This project plans to: 1) experimentally demonstrate the crucial role of the phonon-assisted dynamics in facilitating efficient energy transfer in chromophoric complexes and odour recognition, 2) to develop a general theoretical framework to describe and understand the role coherent vibrations play in the dynamics of biomolecular systems; as well as 3) to develop methods to identify the presence and properties of such vibrations. Furthermore, it aims at controlling the vibrational dynamics for the development of efficient artificial light harvesting systems. To attain these goals, PAPETS shall develop a truly multidisciplinary and original approach.

PROJECT RESULTS

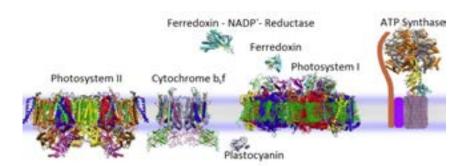
The project is expected to yield an understanding of photosynthesis and olfaction at the most fundamental level, thus contributing in a unique way to such important challenges as the development of more efficient light harvesting technologies or artificial odour sensors.

Furthermore, the understanding and control of environment-assisted coherent dynamics could potentially lead to new forms of robust quantum information processing in the future.









UNIVERSITAET ULM - Germany STICHTING VU-VUMC - Netherlands UNIVERSITÀ DEGLI STUDI DI PADOVA -Italy

BIOMEDICAL SCIENCES RESEARCH CENTER ALEXANDER FLEMING - Greece

CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE - France

UNIVERSITY COLLEGE LONDON - United Kingdom

INFORMATION

Contract Number 610713

Theme

ICT

Instrument

CP-FP-INFSO

Total Cost

4.490.252 €

EC Contribution

3.249.250 €

Coordinator EC Contribution

587.050 €

Project Start Date

01-Oct-13

Scientific Coordinator

Luís Rodrigues (ler@inesc-id.pt)

INESC ID – INSTITUTO DE ENGENHARIA DE SISTEMAS E COMPUTADORES, INVESTIGAÇÃO E DESENVOLVIMENTO EM LISBOA Rua Alves Redol 9 1000-029 LISBOA

Duration

36 Months

Project Website www.pcas-project.eu

ABSTRACT (Project Objectives & Description of Work)

PCAS aims at providing an innovative, trustworthy, handheld device. The Secured Personal Device (SPD) will allow users to securely store their data, to share it with trusted applications, and to easily and securely authenticate him/her. The SPD will recognize its user using multiple biometric sensors, including a stress level sensor to detect coercion. Using the same biometric authentication, the SPD will be able to enforce secure communication with servers in the cloud, relieving the user from memorizing passwords.

The SPD will take the form of a smartphone add-on that draws power from the smartphone and uses its communication services. The security and authentication mechanisms will use software components running on the SPD, on the smartphone, and in the cloud. These software components will enable the secure authentication on the smartphone and on the cloud, authorize access to the stored data on the SPD and securely transfer data from/to remote devices: USB or NFC connected computers or remote web services. The project will develop a full environment composed of programming APIs (needed to develop trusted applications) and modules that allow the easy integration of PCAS with existing web services.

PROJECT RESULTS

PCAS will produce the following results: (i) a portable, personal and biometrically secured storage device; (ii) the integration of biometrical authentication on mobile devices (access to local files and remote services); (iii) secured communication architecture between the SPD, a smartphone and the service providers; and (iv) overall increase of security on the access and storage of data (local and online).

PCAS will be integrated and validated in two different scenarios, demonstrating its benefits: university campus (authentication and access to physical and remote services) and eHealth (storage, update and access to private health records).

PCAS is expected to have a high impact in security and privacy in mobile devices. The project will enable a trustworthy ICT ecosystem, removing psychological barriers of the citizens to the adoption of eHeath and other novel ICT applications. The project will also foster novel market segments that will exploit these applications.

O.S. NEW HORIZON - PERSONAL COMPUTING SOLUTIONS LTD - Israel

UNIVERSIDAD POLITECNICA DE MADRID - Spain

NORSK REGNESENTRAL STIFTELSE – Norway

COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES – France

MAXDATA-INFORMATICA LDA — Portugal

AFCON CONTROL & AUTOMATION LTD - Israel







PEACE

IP-Based Emergency Applications and Services for Next Generation Networks

INFORMATION

Contract Number

225654

Theme

ICT

Instrument

CP-FP-INFSO

Total Cost

3.777.900 €

EC Contribution

2.648.800 €

Coordinator EC Contribution

622.200 €

Project Start Date

01-Sep-08

Scientific Coordinator

Luís Campos

(luis.campos@pdmfc.com)

PDM E FC – PROJECTO DESENVOLVIMENTO MANUTENÇÃO FORMAÇÃO E CONSULTADORIA, LDA.

Rua Fradesso da Silveira n. 4, 1B 1300-609 LISBOA

Duration

29 Months

Project Website http://www.ict-peace.eu/

ABSTRACT (Project Objectives & Description of Work)

The transition to next generation networks is often coupled with the vision of innovative services providing personalized and customisable services over an all-IP infrastructure. To enable a smooth transition, next generation all-IP networks need not only to support more services but also to support current vital services, namely emergency services. The PEACE project will provide a general emergency management framework addressing extreme emergency situations as well as day-to-day emergency cases based on the IP Multimedia Subsystem (IMS). To achieve this goal, the PEACE project will be addressing two major technological challenges: (i) a general solution for secure multimedia communication in extreme emergency situations; and (ii) an architecture to support the distribution of currently centralized services, such as VoIP and name translation.

PROJECT RESULTS

The PEACE project developed a framework addressing emergency situations, such as extreme emergencies (natural catastrophes, terrorist attacks) as well as daily emergencies (police and fire brigade incidents). The developed framework supports: management of ad-hoc networks and wireless mesh networks; secure multimedia communication; localization service; and fault tolerance and reliable communications.

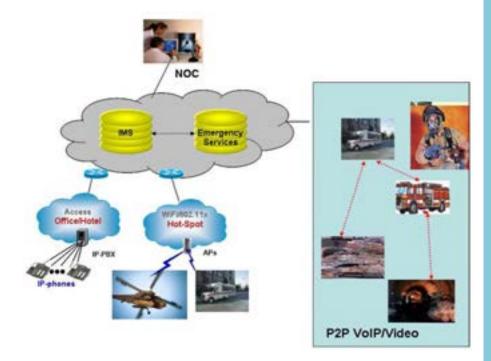
It provides a reliable and secure communication infrastructure and tools for first responders using a fast and lightweight establishment of trust relations between ad-hoc members of an emergency team, IMS enhancements in the context of daily emergency services and risk coordination and communications for both daily and extreme emergency situations and Location-Aware Embedded applications.

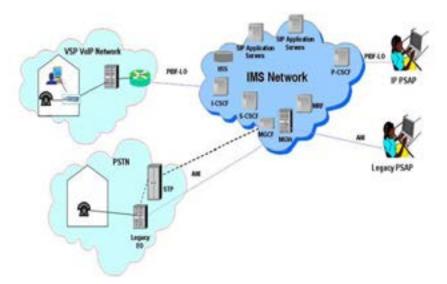
The developed components used the following technologies: IMS; Wireless Sensor Networks / ad-hoc / wireless Mesh; P2P VoIP/Video communication; Localization aware services (weather, driving traffic conditions, road safety, real-time monitoring).

To enable multimedia communication in emergency environments, an architecture was provided for supporting the distribution of currently centralized services such as VoIP and name translation, supported in a reliable manner, withstanding any failures and changes of the network.

Finally, the PEACE project investigated the provisioning of day-to-day emergency communication.







INSTITUTO DE TELECOMUNICAÇÕES – Portugal

KINGSTON UNIVERSITY - United Kingdom

FRAUNHOFER-GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V – Germany

UNIVERSITY OF PATRAS - Greece

THALES COMMUNICATIONS & SECURITY SAS – France

TELEFÓNICA INVESTIGACIÓN Y DESARROLLO SA – Spain

PALE BLUE AB - Sweden

PROSE

Promoting Open Source in European Projects

INFORMATION

Contract Number

318218

Theme

ICT

Instrument

CSA-CA

Total Cost

594.446 €

EC Contribution

488.000 €

Coordinator EC Contribution

123.500 €

Project Start Date

01-Oct-12

Scientific Coordinator

Alfredo Matos (alfredo.matos@caixamagica.pt)

CAIXA MÁGICA SOFTWARE, LDA. R. Soeiro P. Gomes lote 1, 4 B 1600-196 LISBOA

Duration

24 Months

Project Website www.ict-prose.eu

ABSTRACT (Project Objectives & Description of Work)

The PROSE project contributed to the adoption of open source software on ICT projects by increasing the lifetime of the software developed inside European projects and thus maximizing impacts. This was achieved through the creation of a coordination platform for hosting software projects, as well as promoting dissemination and training events on Open Source topics.

To achieve this vision, it was necessary to promote Free/Libre Open-Source Software (FLOSS) for ICT projects, by removing existing obstacles, especially legal and business barriers. This required creating a feedback loop for FLOSS use in ICT projects financed by the EC and allowing them to assess the true benefits of a FLOSS-driven model, enabling a long term exploitation of FLOSS through a sustainable model for ICT contributions. PROSE defined a threefold approach to FLOSS in European projects, aiming at:

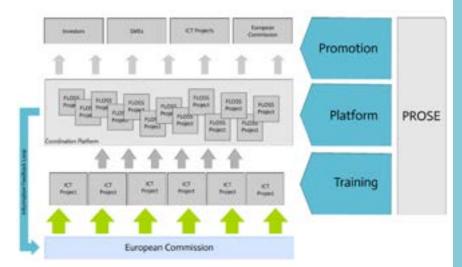
- Creating and managing a platform for FLOSS software project management;
- Developing a training program on legal and business aspects pertaining to FLOSS adoption;
- Carrying out a dissemination program to promote the adoption of a FLOSS-driven model in ICT projects.

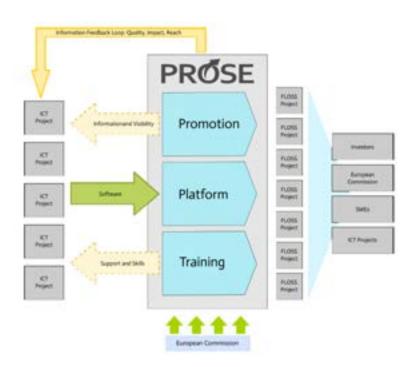
PROJECT RESULTS

PROSE produced a platform for hosting and supporting (ICT) FLOSS software that allows creating and managing software repositories. Beyond supporting the development process, the infrastructure defined a common location for ICT software. The platform "Open Source Projects" available at http://opensourceprojects.eu also included community and software management tools, as well as access to methodology, business and legal information required for FLOSS adoption.

To support the FLOSS adoption process, PROSE provided training documentation for the software platform, as well as for the legal and business aspects that relate to FLOSS use. The Platform information describes FLOSS development methodologies, allowing ICT projects to take advantage of the tools. Finally, it was necessary to provide information enabling successful FLOSS exploitation models, namely by taking into account topics such as Licensing and Intellectual Property Rights.







INSTITUTO DE TELECOMUNICAÇÕES – Portugal

WATERFORD INSTITUTE OF TECHNOLOGY - Ireland

MFG MEDIEN-UND FILMGESELLSCHAFT BADEN-WUERTTEMBERG MBH – Germany

EDWARDS WILDMAN PALMER UK LLP - United Kingdom

GEEKNET MEDIA LTD - United Kingdom

ORIGIN LLP - United Kingdom

BITERGIA - Spain

P-SOCRATES

Parallel SOftware framework for time-CRitical mAny-core sysTEmS

INFORMATION

Contract Number

611016

Theme

ICT

Instrument

CP-FP-INFSO

Total Cost

3.624.942 €

EC Contribution

2.762.000 €

Coordinator EC Contribution

544.140 €

Project Start Date

01-Oct-13

Scientific Coordinator

Luís Miguel Pinho (lmp@isep.ipp.pt)

INSTITUTO SUPERIOR DE ENGENHARIA DO PORTO R. Dr. Ant. B. de Almeida, 432 4200-072 PORTO

Duration

36 Months

Project Website www.p-socrates.eu

ABSTRACT (Project Objectives & Description of Work)

Nowadays, the prevalence of electronic and computing systems in our lives is so ubiquitous that it would not be far-fetched to state that we live in a cyber-physical world dominated by computer systems. Examples include pacemakers, cars and airplanes, smart grids and traffic management. All these systems demand for more and more computational performance to process large amounts of data from multiple data sources, and some of them with guaranteed processing response times. In other words, systems are required to deliver their results within pre-defined (and sometimes extremely short) time bounds. This timing aspect is vital for systems like planes, cars, business monitoring, e-trading, etc. All these systems require processing and actuation based on big amounts of data coming from real-time sensor information.

The aim of P-SOCRATES is to allow current and future applications with high-performance and real-time requirements to fully exploit the huge performance opportunities brought on by the most advanced many-core processors, whilst ensuring a predictable performance and maintaining (or even reducing) development costs of applications.

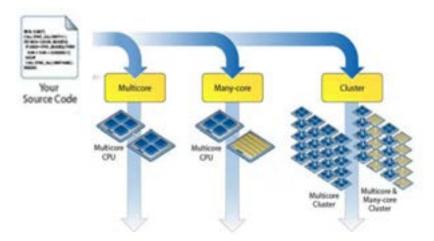
PROJECT RESULTS

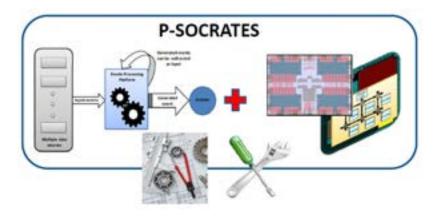
P-SOCRATES will develop an entirely new generic design framework, from the conceptual design of the system functionality to its physical implementation, to facilitate the deployment of standardized parallel architectures in all kinds of systems.

Industrial companies will benefit from the project outcomes, allowing European technology suppliers to properly exploit the capabilities of next-generation hardware platforms in a predictable way. Impacts are foreseen in the development of enabling technologies for both the high-performance and embedded computing domains. From an applicative point of view, P-SOCRATES will represent a reference point for the implementation of real-time complex event-processing systems, and, more in general, of workload-intensive applications with time-criticality requirements, enabling a more efficient smart society. The computing technology developed in the project will allow a deeper understanding of many-core off-the-shelf systems, enabling new kinds of applications to be developed on top of these platforms.









BARCELONA SUPERCOMPUTING CENTER - CENTRO NACIONAL DE SUPERCOMPUTACION - Spain

UNIVERSITÀ DEGLI STUDI DI MODENA E REGGIO EMILIA – Italy

EIDGENOESSISCHE TECHNISCHE HOCHSCHULE ZURICH – Switzerland

EVIDENCE SRL - Italy

ACTIVE TECHNOLOGIES SRL - Italy

ATOS SPAIN SA - Spain

QTLeap

Quality Translation by Deep Language Engineering Approaches

INFORMATION

Contract Number

610516

Theme

ICT

Instrument

CP-FP-INFSO

Total Cost

3.972.243 €

EC Contribution

3.003.000 €

Coordinator EC Contribution

766.402 €

Project Start Date

01-Nov-13

Scientific Coordinator

António Branco

(antonio.branco@di.fc.ul.pt)

UNIVERSIDADE DE LISBOA FACULDADE DE CIÊNCIAS DEP. DE INFORMÁTICA Campo Grande ed. C6, piso 3 1749-016 LISBOA

Duration

36 Months

Project Website http://qtleap.eu

ABSTRACT (Project Objectives & Description of Work)

The goal of the QTLeap project is to research on and deliver an articulated methodology for machine translation that explores deep language engineering approaches in view of breaking the way towards translations of higher quality.

The deeper the processing of sentences, the less language-specific differences remain between the representation of the meaning of a given utterance and the meaning representation of its translation. Further chances of success can thus be explored by machine translation systems that are based on deeper semantic engineering approaches.

Deep language processing has its stepping-stone in linguistically principled methods and generalizations. It has been evolving towards supporting realistic applications, namely by embedding more data based solutions, and by exploring new types of datasets that were recently developed, such as parallel DeepBanks.

This progress is further supported by recent advances in terms of lexical processing. These advances have been made possible by enhanced techniques for referential and conceptual ambiguity resolution, and supported also by new types of recently developed datasets as linked open data.

PROJECT RESULTS

This project will deliver both an articulated methodology for quality machine translation (MT) that innovatively explores deep language engineering approaches to language technology, and an empirically grounded validation of its technological potential and impact.

In the pursuit of these results, this project will develop MT pilots delivering quality machine translation services whose exploitation will foster new solutions in the business sector, especially in all those vast areas for which machine translation of higher quality than current state of the art is still needed and in high demand.

DEUTSCHES FORSCHUNGSZENTRUM FUER KUENSTLICHE INTELLIGENZ GMBH – Germany

UNIVERZITA KARLOVA V PRAZE - Czech Republic

INSTITUTE OF INFORMATION AND COMMUNICATION TECHNOLOGIES – Bulgaria

HUMBOLDT-UNIVERSITAT ZU BERLIN -Germany

UNIVERSIDAD DEL PAIS VASCO EHU UPV - Spain

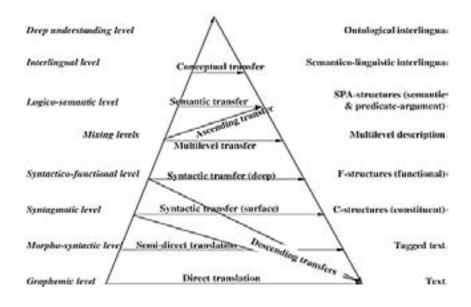
RIJKSUNIVERSITEIT GRONINGEN – Netherlands

HIGHER FUNCTIONS - SISTEMAS INFORMÁTICOS INTELIGENTES LDA -Portugal



quality translation with deep language engineering approaches

qtleap



RoCKIn

Robot Competitions Kick Innovation in Cognitive Systems and Robotics

INFORMATION

Contract Number

601012

Theme

ICT

Instrument

CSA-CA

Total Cost

2.015.358 €

EC Contribution

1.701.814 €

Coordinator EC Contribution

361.514 €

Project Start Date

02-Jan-13

Scientific Coordinator

Pedro Lima

(pal@isr.ist.utl.pt)

IST ID - ASSOCIAÇÃO DO
INST. SUPERIOR TÉCNICO
PARA A INVESTIGAÇÃO
E DESENVOLVIMENTO
Avenida Rovisco Pais 1
1049-001 LISBOA

Duration

36 Months

Project Website www.rockinrobotchallenge.eu

ABSTRACT (Project Objectives & Description of Work)

Robot competitions have proved to be an effective instrument to foster scientific research and push the state of the art in a field. Teams participating in a competition must identify best practice solutions covering a wide range of functionalities and integrate them into practical systems. These systems have to work in the real world, outside of the usual laboratory conditions. The competition experience helps to transfer the applied methods and tools to successful and high-impact real-world applications. Robot competitions are also highly successful in attracting young students to science and engineering disciplines, and by demonstrating the relevance of robotics research to citizens.

The goal of RoCKIn is to speed up progress towards smarter robots through scientific competitions. Two challenges have been selected for the competitions due to their high relevance and impact on Europe's societal and industrial needs: domestic service robots (RoCKIn@Home) and innovative robot applications in industry (RoCKIn@Work). Both challenges have been inspired by activities in the RoboCup community, but RoCKIn improves and extends them by introducing new and prevailing research topics, like natural interaction with humans or networking mobile robots with sensors in ambient environments, in addition to specifying concrete benchmark criteria for assessing progress.

PROJECT RESULTS

- RoCKIn@Home fosters development of robots that are able to perform socially useful tasks such as supporting the impaired and the elderly, contributing to an improved quality of life for European citizens.
- RoCKIn@Work fosters the development of innovative robot applications in industry, ensuring the continued commercial competitiveness of industry within Europe.
- International Education Camps, for students will bring new teams from research labs and companies to robot competitions.
- Open specification test beds shall be built in partner labs and used in competitions.
- Two competitions: November 2014, in Toulouse, France, and November 2015, in Lisbon, Portugal.







UNIVERSITÀ DEGLI STUDI DI ROMA LA SAPIENZA – Italy HOCHSCHULE BONN-RHEIN-SIEG – Germany

KUKA LABORATORIES GMBH - Germany POLITECNICO DI MILANO - Italy

INNOCENTIVE EMEA LTD - United Kingdom

UAN

INFORMATION

Contract Number 225669

Theme ICT

Instrument
CP-FP-INFSO

Total Cost **4.263.233 €**

EC Contribution 2.950.000 €

Coordinator EC Contribution
438.731 €

Project Start Date 01-Oct-08

Scientific Coordinator
Sérgio Jesus
(sjesus@ualg.pt)

CINTAL – CENTRO DE INVESTIGAÇÃO TECNOLÓGICA DO ALGARVE Quinta da Penha 8005-139 FARO

Duration **36 Months**

Project Website www.siplab.fct.ualg.pt/UAN/

ABSTRACT (Project Objectives & Description of Work)

The UAN project aimed at conceiving, developing and testing at sea an innovative and operational concept for integrating in a unique system submerged, surface and aerial sensors with the objective of protecting critical infrastructures, such as off-shore platforms and energy plants. The security of such economically vital infrastructures required an integrated approach involving underwater and land/air sensors and actuators for surveillance, monitoring and deterrence. In particular UAN focuses on a security oriented underwater wireless network infrastructure, built using hydroacoustic communication.

The UAN concept was to gather environmental information during the acoustic transmission and use it to predict the acoustic propagation conditions and the optimal obtainable performance at any given time. This was a rather new approach that requires a better understanding of the acoustic propagation physics as well as a capacity to include that knowledge into technologically advanced communications modules and algorithms for underwater communications.

PROJECT RESULTS

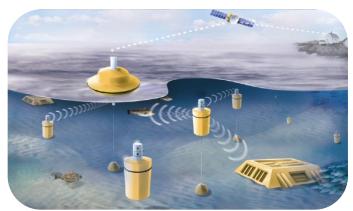
This project allowed, for the first time, that an acoustic network with fixed and mobile nodes was seamless integrated in a land communication network and demonstrated to be fully operational at sea. This represented a landmark in underwater communication functionality in general and for security applications in particular. This breakthrough opens up the possibility for easy deployment of a surveillance network around any coastal facility, either permanent or temporary, with a potential impact in any exploratory deployment for search and rescue, for detection, mapping or protection of sensitive sites and environmental observatories. The ability to communicate between various submerged platforms in a network fashion is a must have requirement not only for security or surveillance purposes but also for any exploratory mission involving various fixed and/or moving platforms operating in cooperation. Potential beneficiaries include any entity involved with ocean exploration, e.g., the scientific community, oil and gas exploration, port authorities, civilian search and rescue operation bodies and the military. The impact of the achievements under UAN will likely foster other applications and discoveries in the years to come.



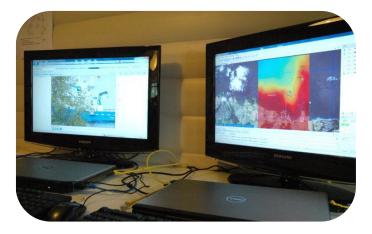
TOTALFORSVARETS FORSKNINGSINSTITUT – Sweden

KONGSBERG MARITIME AS - Norway









UNITE

UpgradiNg ICT excellence by strengthening cooperation between research Teams in an enlarged Europe

INFORMATION

Contract Number

248583

Theme

ICT

Instrument

CSA-CA

Total Cost

560.561 €

EC Contribution

495.995 €

Coordinator EC Contribution

350.439 €

Project Start Date

01-Feb-10

Scientific Coordinator

Ricardo Gonçalves (rg@uninova.pt)

UNINOVA - INSTITUTO DE
DESENVOLVIMENTO
DE NOVAS TECNOLOGIAS
Campus da FCT/UNL
Monte de Caparica
2829-516 CAPARICA

Duration

39 Months

Project Website www.unite-europe.eu

ABSTRACT (Project Objectives & Description of Work)

The UNITE concept anticipated to increase the level of excellence of ICT research across an enlarged Europe in the ICT Challenge "Pervasive and Trustworthy Network and Service Infrastructures". The project aimed to support the flow of skilled people among universities, research institutions, and business-related companies, of the old and new member countries, through a secondment programme.

UNITE based its secondment activities on an offer/demand matrix, that related the potential host organization's interests on receiving knowledge with the expertise they could provide to others.

PROJECT RESULTS

UNITE financed 44 secondees/researchers for stays from one to 12 months, with an average duration of 3 months. UNITE secondees have produced a total of 73 papers (11 submitted to recognized journals).

UNITE organized two Doctoral Symposiums, publishing two proceedings books with more than 50 research papers developed by the UNITE secondees, representing significant contribution in the S/T developments in the domain of the Future of Internet.

UNITE also organised targeted workshops and doctoral symposiums, across the enlarged Europe to build-up synergies and support networking and collaboration.

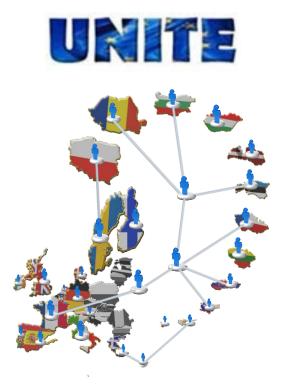
Finally, for ensuring a long-term cooperation and the pursuit of the secondment action, UNITE started the creation of two 'Eastern Europe' INTEROP-VLab Poles, enabling to build up consortiums to widen the participation of enlarged Europe in EC ICT research projects.

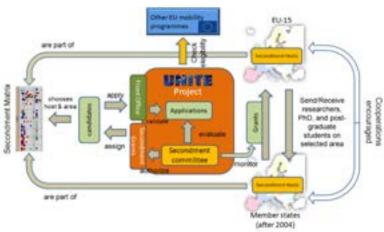
LABORATOIRE VIRTUEL EUROPEEN DANS LE DOMAINE DE L'INTEROPERABILITE DES ENTREPRISES AISBL – Belgium

SOFIISKI UNIVERSITET SVETI KLIMENT OHRIDSKI – Bulgaria

INSTITUT JOZEF STEFAN - Slovenia

UNIVERSITATEA POLITEHNICA DIN BUCURESTI - Romania









NMP

EXPLORE

Extended Exploitation of European Research Projects & Knowledge and Results

INFORMATION

Contract Number 609226

Theme NMP

Instrument

CSA-CA

Total Cost **1.529.411 €**

EC Contribution

1.139.500 €

Coordinator EC Contribution

201.466 €

Project Start Date

01-Sep-13

ScientificCoordinator

José Carlos Caldeira (jcc@inescporto.pt)

INESC PORTO - INSTITUTO DE ENGENHARIA DE SISTEMAS E COMPUTADORES DO PORTO Campus da FEUP Rua Dr. Roberto Frias 378 4200-465PORTO

Duration

24 Months

Project Website www.explore-fp7.eu

ABSTRACT (Project Objectives & Description of Work)

The EXPLORE project aims at unleashing the full potential of the accumulated knowledge portfolio existing at European level in the area of Production Technologies. EXPLORE targets this goal by promoting the use of knowledge in developing advanced products and services to address the challenges and needs of the manufacturing industries.

The project will promote and support the industrial exploitation of R&D results, mainly by gathering resources to disseminate (models, case studies, demonstrators) and prepare the commercial exploitation, using cross-fertilisation, stimulating education and fostering standardization. The test-bed will be settled in 10 Regions across Europe and 10 Industrial Sectors.

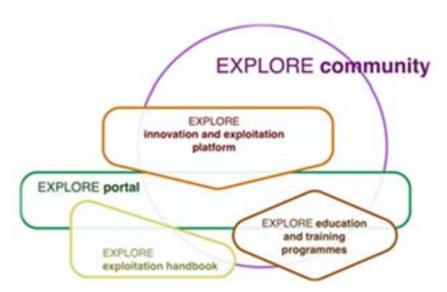
Such challenges call for the involvement of different stakeholders, gathering complementary knowledge, competences and resources, such as: (i) exploitable results of European R&D projects; (ii) sectorial challenges and needs; (iii) national/regional, private/public funding sources; and (iv) a broad European network of partners.

PROJECT RESULTS

- Creation of the Innovation and Exploitation Platform;
- Development of the Handbook to support exploitation;
- Identification of existing demonstrators and pilot lines, and development of a roadmap for implementing new ones;
- Concept for an European Network of Demonstrators and Pilot Lines;
- Identification of the main barriers for innovation and exploitation, and production of recommendations;
- Identification of unmatched sectoral innovation challenges, and production of the corresponding roadmap;
- Gap analysis and recommendations in standardization opportunities, education and training.

FXPI ORF





PARTNERS

FUNDACION TECNALIA RESEARCH & INNOVATION - Spain

CONSIGLIO NAZIONALE DELLE RICERCHE - Italy

FRAUNHOFER-GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V - Germany

NEDERLANDSE ORGANISATIE VOOR TOEGEPAST NATUURWETENSCHAPPELIJK ONDERZOEK – TNO - Netherlands

FONDAZIONE POLITECNICO DI MILANO - Italy

UNIVERSITY OF PATRAS - Greece

CECIMO - THE EUROPEAN COMMITTEE FOR THE CO-OPERATION OF THE MACHINE TOOLS - Belgium

CENTRE TECHNIQUE DES INDUSTRIES MECANIQUES - France

AGORIA ASBL - Belgium

TTY-SAATIO - Finland

DOLNOSLASKI PARK INNOWACJI I NAUKI S.A. - Poland

SCUOLA UNIVERSITARIA PROFESSIONALE DELLA SVIZZERA ITALIANA - Switzerland

WIRTSCHAFTSFOERDERUNG REGION STUTTGART GMBH - Germany

FIND AND BIND

Mastering Sweet Cell-Instructive Biosystems by Copycat Nano-Interaction of Cells with Natural Surfaces for Biotechnological Applications

INFORMATION

Contract Number

229292

Theme

NMP

Instrument

CP-FP

Total Cost

4.646.008 €

EC Contribution

3.594.828 €

Coordinator EC Contribution

809.449 €

Project Start Date

1-Oct-09

Scientific Coordinator

Rui L. Reis

(rgreis@dep.uminho.pt)

UNIVERSIDADE DO MINHO GRUPO 3B'S AvePar, Zona Industrial da Gandra

S. Claudio do Barco

4806-909 GUIMARÃES

Duration

48 Months

Project Website www.findandbind.eu

ABSTRACT (Project Objectives & Description of Work)

The objective is to exploit the potential of carbohydrates as Carbohydrates-based biosensors. To do so, it will be necessary to create biologic design criteria for new materials and equipment development through understanding, mimeting and control, at nano scale, of cellular interaction mechanisms in vivo. This will be achieved through:

- Oligosaccharides as regulators of cell behaviour;
- Effective synthetic routes to obtain bioactive carbohydrates;
- Adipose mesenchymal stem cells for bone regeneration.

PROJECT RESULTS

The expect impacts of this project are:

- Confronting the transplantation crisis (bone);
- Cost and time effective diagnosis;
- Faster and easier integration of implanted devices;
- Successful bone regeneration.

So far, the results achieved are:

- Biotinylated QCM-D sensor (Q-Sense) it allows specific and controlled immobilization of biotinylated carbohydrate in a monolayer of streptavidin, keeping surface passive;
- Different approaches to the immobilization of glycosaminoglycans which trigger distinct cellular responses.



EIDGENOESSISCHE TECHNISCHE HOCHSCHULE ZURICH - Switzerland

CHALMERS TEKNISKA HOEGSKOLA AB - Sweden

VEREIN ZUR FORDERUNG VON INNOVATIONEN DURCH FORSCHUNG ENTWICKLUNG UNDTECHNOLOGIETRANSFER EV - Germany

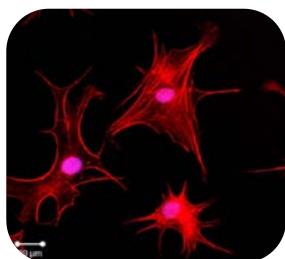
FUNDACION TEKNIKER - Spain

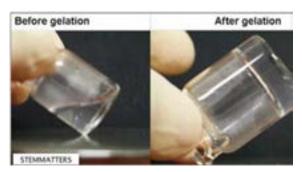
Q-SENSE AB - Sweden

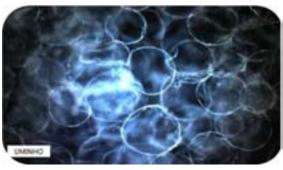
HISTOCELL S.L. - Spain

STEMMATTERS, BIOTECNOLOGIA E MEDICINA REGENERATIVA LDA - Portugal









FOCUS

Advances in Forestry Control and Automation Systems in Europe

INFORMATION

Contract Number 604286

Theme

NMP

Instrument

CР

Total Cost

4.053.619 €

EC Contribution

3.054.188 €

Coordinator EC Contribution

480.076 €

Project Start Date

01-Jan-2014

Scientific Coordinator

Alexandra Marques

(alexandra.s.marques@inescporto.pt)

INESC PORTO - INSTITUTO DE
ENGENHARIA DE SISTEMAS E
COMPUTADORES DO PORTO
Campus da FEUP
Rua Dr. Roberto Frias 378
4200-465 PORTO

Duration

30 Months

Project Website www.focusnet.eu

ABSTRACT (Project Objectives & Description of Work)

Long term sustainability of European forest-based industries and the development of rural areas require further improvements in the integration and automation of forest related processes, pushing forward precision forestry.

FOCUS will demonstrate how innovative sensor technologies and sophisticated software solutions can integrate control and planning processes across the forest-based value chains while assuring efficient communication mechanisms between the multiple enterprises.

The goal of FOCUS is to improve sustainability, productivity, and product marketability of forest-based value chains through an innovative technological platform for integrated planning and control of the whole tree-to-product operations, used by forest-producers to industry players.

For this purpose, FOCUS brings together leading SMEs, experts and organisations in the fields of precision forestry, sensors, automation and software development. Case studies will be set in Finland, Belgium, Switzerland, Austria and Portugal covering the four main forest-based value chains in Europe (lumber, pulpwood, biomass and cork), from forest planning and monitoring forest growth, harvesting, wood transportation and industrial processing.

PROJECT RESULTS

The expected results are:

- Improved sensor technologies for monitoring environment conditions, raw materials traceability and machinery/operations productivity;
- Novel software for planning, control and automation of singular operations of the value chain, predicting future instructions for the workers and machineries based on the sensor data input;
- New interoperable plug-and-play architecture for the integrated technological platform for wide value chain planning and control;
- New business models for collaboration among players of the forest-based value chains;
- Prototypes of the FOCUS technological solution used in pilot cases in Europe for validating and disseminating project results.



Advances in Forestry Control & Automation Systems in Europe





PARTNERS

SIMOSOL OY - Finland

BERNER FACHHOCHSCHULE - Switzerland

RESEARCH STUDIOS AUSTRIA FORSCHUNGSGESELLSCHAFT MBH -Austria

HOLZCLUSTER STEIERMARK GMBH -Austria

AZEVEDOS INDUSTRIA MÁQUINAS E EQUIPAMENTOS INDUSTRIAIS SA -Portugal

KATHOLIEKE UNIVERSITEIT LEUVEN - Belgium

TEKNOLOGIAN TUTKIMUSKESKUS VTT - Finland

HOHENLOHER SPEZIAL-MASCHINENBAU GMBH & CO. KG - Germany

MINISTERIUM FÜR KLIMASCHUTZ, UMWELT, LANDWIRTSCHAFT, NATUR- UND VERBRAUCHERSCHUTZ DES LANDES NORDRHEIN-WESTFALEN - Germany

WAHLERS FORSTTECHNIK GMBH - Germany

VALDEMAR FERNANDES DA SILVA SA - Portugal

InnoMatNet

Networking of Materials Laboratories and Innovation Actors in Various Industrial Sectors for Product or Process Innovation

INFORMATION

Contract Number 290583

Theme

NMP

Instrument

CSA-CA

Total Cost

1.422.705 €

EC Contribution

1.199.628€

Coordinator EC Contribution

276.709€

Project Start Date

01-Apr-12

Scientific Coordinator

Augusto Medina (augustomedina@spi.pt)

SOCIEDADE PORTUGUESA

DE INOVAÇÃO S.A.

Av. M. Gomes da Costa, 1376

4150-356 PORTO

Duration

30 Months

Project Website www.innomatnet.eu

ABSTRACT (Project Objectives & Description of Work)

Materials are key to technological advances in many fields, and particularly important for the success of Creative Industries. The materials industry has well established technological competences (technology push), whereas the creative industry is stronger in interpreting the context of using materials and user needs (market pull). However, there is a gap between the creative design of products that meet the market's needs and the research and development of new materials to be used in these products.

The InnoMatNet project intends to contribute to reducing this gap, by disseminating existing tools and initiatives and promoting new alliances between materials researchers, designers in industry, and other agents involved in innovation.

PROJECT RESULTS

The main project results will include:

- Database of key European stakeholders;
- Gap analysis between the needs of stakeholders and existing instruments supporting innovation;
- Best practice case-studies (both in a report and as videos, available on the project website);
- Information and networking website;
- 10 networking and training events;
- 2 Summer Schools.

EUROPEAN BUSINESS AND INNOVATION

PARTNERS

EUROPEAN BUSINESS AND INNOVATION CENTRE NETWORK - Belgium

CHEMISTRY INNOVATION LIMITED - United Kingdom

THE INSTITUTE OF MATERIALS, MINERALS AND MINING - United kingdom

BIBA - BREMER INSTITUT FUER PRODUKTION UND LOGISTIK GMBH -Germany

EUROPEAN MATERIALS RESEARCH SOCIETY - France

EUROPEAN ARCHITECTURE FOUNDATION VZW - Belgium

FUNDACION PRIVADA CETEMMSA - Spain

EUROPEAN NETWORK OF LIVING LABS - Belgium

PUBLIC RESEARCH ORGANISATIONS TRANSFER OFFICES NETWORK- EUROPE -Belgium

TRANSPLANT AS - Norway







MetalMorphosis

Optimization of Joining Processes for New Automotive Metal-Composite Hybrid Parts

INFORMATION

Contract Number 609039

Theme

NMP

Instrument

CP-FP

Total Cost

4.097.974 €

EC Contribution

2.932.105 €

Coordinator EC Contribution

406.469 €

Project Start Date

01-Sep-13

Scientific Coordinator

Rui Soares

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CENTIMFE

CENTRO TECNOLÓGICO DA INDÚSTRIA DE MOLDES E FERRAMENTAS ESPECIAIS Rua de Espanha lote 8 2431-904 MARINHA GRANDE

Duration

30 Months

Project Website www.metalmorphosis.eu

ABSTRACT (Project Objectives & Description of Work)

The overall aim of the MetalMorphosis project is to develop a range of novel metal-composite hybrid products for the automotive industry, using the new and innovative electromagnetic pulse technology, which is highly suitable for joining dissimilar metal products. Its application range will be extended towards joining of composites and metals.

Composites offer the possibility to achieve impressive weight reductions for the next generation products. Composite production processes and materials evolve quickly to fulfill the needs of a diverse range of industries, including established markets such as sports and aerospace, fast growing markets such as wind energy, and emerging markets such as infrastructure, consumer products and automotive, where composites now increasingly penetrate, replacing traditional construction materials.

The joining technology uses pulsed electromagnetic forces to contactless deform and/or join workpieces. This process also offers the possibility to join material combinations that are difficult or impossible to join using conventional processes. Electromagnetic pulse joining is an automatic process and is already used in the automotive industry for joining metals, due to its specific technical advantages, among which its high repeatability and being a cold joining process (it does not use heat but pressure to create a joint). Moreover, the process is also much more environmentally friendly compared to conventional joining processes.

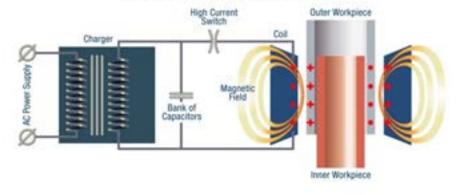
PROJECT RESULTS

- New joining processes for composites and metals, for sheet and tubular applications;
- Knowledge about the properties of the joined materials and workpieces (strength, ductility, microstructure) and evaluation of the applicability of the process;
- Demonstration that the electromagnetic pulse technology is a valuable alternative for realising high-performance joints;
- Increased productivity and cost reduction for hybrid components;
- Coping with the requirements of environmental compatibility.





Magnetic Pulse System Layout



PARTNERS

BELGISCH INSTITUUT VOOR LASTECHNIEKVZW - INSTITUT BELGE DE LA SOUDURE ASBL - Belgium

TENNECO AUTOMOTIVE EUROPE BVBA - Belgium

STAM SRL - Italy

FUNDACION CIDAUT - Spain

TOOLPRESSE, PECAS METALICAS POR PRENSAGEM LDA - Portugal

POYNTING GMBH - Germany

IDEKO S. COOP. - Spain

REGENERACIJA NAKUP, PREDELAVA, PRODAJA, DOO - Slovenia

NANOFOL

Folate-Based Nanodevices for Integrated Diagnosis/Therapy Targeting Chronic Inflammatory Diseases

INFORMATION

Contract Number

228827

Theme

NMP

Instrument

CP-IP

Total Cost

6.635.409 €

EC Contribution

5.149.874 €

Coordinator EC Contribution

1.054.530 €

Project Start Date

1-Dec-09

Scientific Coordinator

Artur Cavaco-Paulo (artur@deb.uminho.pt)

UNIVERSIDADE DO MINHO DEP. DE ENG. BIOLÓGICA Campus de Gualtar 4710-057 BRAGA

Duration

48 Months

Project Website www.nanofol.eu

ABSTRACT (Project Objectives & Description of Work)

NANOFOL has adopted a specific approach in order to gradually improve the concept (specificity, stability, side effects and efficacy) from lower to higher risk solutions ensuring reduced animal testing and high human safety.

It will improve treatment of chronic inflammatory diseases by fulfilling the following objectives:

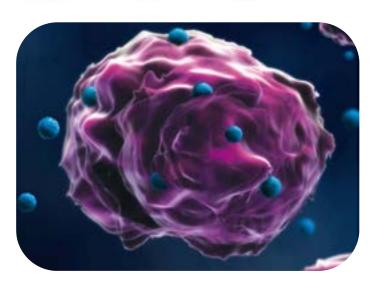
- Design, development and production of nanobiodevices directly targeting effector cells;
- Experimental design that will enable minimal animal experimentation;
- Development of a strategy to assess potential life cycle risks ensuring safe nanobiodevice-mediated delivery;
- Setting-up better citizen awareness on nanomedicine-based therapies and training activities.

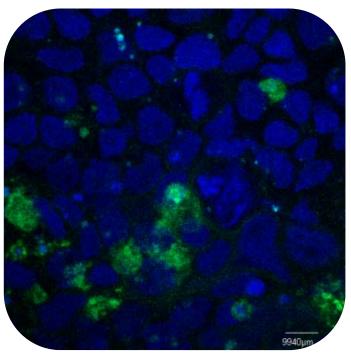
PROJECT RESULTS

Patent application reference of innovations:

- Protein micellar formulations for controlled release and respective production method PT106047 2011;
- Formulations of peptides and liposomes and respective production method PT106050 2012;
- Assessment of nanobiodevice toxicity in vitro and in vivo.







SUAN FARMA S.A. - Spain

TECHNISCHE UNIVERSITAET GRAZ - Austria

NEDERLANDSE ORGANISATIE VOOR TOEGEPAST NATUURWETENSCHAPPELIJK ONDERZOEK - TNO - Netherlands

INSTITUTO DE BIOLOGIA MOLECULAR E CELULAR - IBMC - Portugal

INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM) -France

MEDIZINISCHE UNIVERSITAET WIEN -Austria

UNIVERSITATEA AUREL VLAICU DIN ARAD -Romania

SYNOVO GMBH - Germany

INSTITUT NATIONAL DE L ENVIRONNEMENT ET DES RISQUES INERIS

EXBIO PRAHA AS - Czech Republic

ALMA CONSULTING GROUP SAS - France

ALFAMA - INVESTIGAÇÃO E DESENVOLVIMENTO DE PRODUTOS FARMACÊUTICOS, LDA. – Portugal

UNIVERSITAET FUER BODENKULTUR WIEN - Austria

NET-CHALLENGE

Innovative Networks of SMEs for Complex Products Manufacturing

INFORMATION

Contract Number

229287

Theme

NMP

Instrument

CP-FP

Total Cost

4.336.327 €

EC Contribution

3.144.969 €

Coordinator EC Contribution

557.105 €

Project Start Date

01-Jun-09

Scientific Coordinator

Luis Carneiro (luis.carneiro@inescporto.pt)

INESC PORTO - INSTITUTO DE
ENGENHARIA DE SISTEMAS E
COMPUTADORES DO PORTO
Campus da FEUP
Rua Dr. Roberto Frias, 378
4200-465 PORTO

Duration

33 Months

Project Website www.netchallenge.org

ABSTRACT (Project Objectives & Description of Work)

The main goal of the Net-Challenge project was to support the creation and management of non-hierarchical business networks where SMEs could join competencies and resources to succeed on the global market in the design and manufacturing of complex products.

Specific objectives included the design and development of an integrated framework, composed of a methodology, reference business processes and IT tools, to support SMEs create and manage such networks.

PROJECT RESULTS

The project outcomes were:

- a methodology to help SMEs in the qualification, formation and operation of dynamic networks;
- reference collaboration processes for non-hierarchical networks;
- a framework for performance management in business networks;
- distributed decision support tools to help companies manage manufacturing and logistics processes, including collaborative operations planning; collaborative product concept specification; real-time monitoring and event management and performance management;
- real industrial demonstration of the new methods and tools in three business cases from the textile and apparel, footwear and machine tools sectors;
- training materials to promote the project concepts and to train key users in pilot companies;
- wide dissemination of the project results in industrial companies, technology suppliers and the scientific community;
- creation of links with relevant international research and business communities.







RPB - TÊXTEIS E VESTUÁRIO, SA - Portugal RIOPELE - TÊXTEIS, SA - Portugal ONA ELECTROEROSION, S.A. - Spain ROBOCONCEPT S.L. - Spain

SYNESIS - Italy

ITALIAN CONVERTER S.R.L. - Italy
CONSÌGLIO NAZIONALE DELLE RICERCHE Italy

FUNDACION TECNALIA RESEARCH & INNOVATION - Spain

VAASAN YLIOPISTO - Finland

CENTRO DE INTEGRAÇÃOO E INOVAÇÃO DE PROCESSOS ASSOCIAÇÃO DE I&D -Portugal

WAPICE OY - Finland

TIE NEDERLAND B.V. - Netherlands

TSINGHUA UNIVERSITY - China



ENERGY

BIOFAT BioFuels from Algae Technologies

INFORMATION

Contract Number

268211

Theme

Energy

Instrument

CP

Total Cost

10.016.183 €

EC Contribution

7.773.133 €

Coordinator EC Contribution

2.455.389 €

Project Start Date

01-May-11

Scientific Coordinator

Vítor Verdelho Vieira (vvv@algafuel.pt)

A4F, ALGAFUEL, S.A. Campus do Lumiar Edifício E - R/C 1649-038 LISBOA

Duration

48 Months

Project Website www.biofatproject.eu

ABSTRACT (Project Objectives & Description of Work)

BIOFAT is a 'microalgae to biofuel' Demonstration project with a farming area of 10 hectares (ha) for microalgae cultivation and a target annual productivity of 80-120 tons/ha. The project will integrate all the processes from single cell to biofuel production.

The production stage will be based on photobioreactors for inocula production, and raceways for production of bulk biomass and induction of oil/starch accumulation, necessary to obtain the biofuel (biodiesel and bioethanol). Carbon dioxide derived from fermentation will be used.

Biomass harvesting will be done by pre-concentration and subsequent centrifugation. A low-energy input centrifuge will be used. Extraction will be done by mechanical cell disruption of wet (25-30% dry solids) paste. Oil will be transformed into biodiesel by transesterification, and carbohydrates to bioethanol through fermentation.

Oil and carbohydrate accumulation will be obtained by nutrient stress using specific algal strains. Only marine strains will be used to avoid any competition with food crops. BIOFAT will also develop the concept of algorefinery (i.e., high value co-products besides biofuels).

PROJECT RESULTS

BIOFAT will demonstrate at 10 ha scale proven and tested technologies that have been developed by Consortium members at small scale. Innovation will consist of the scaling-up of the process to the 10 ha Demo Plant.

Specific Engineering and Business Plans for setting up the 10 ha Demo Plant will be based on the results obtained from operation of two 0.5 ha Pilot Plants (Italy and Portugal). The 2 prototypes existing in Israel and Italy will be used for the training of a development team.

The overall sustainability of the algal biofuel and co-products production will be evaluated by Life Cycle Analysis.

A specific investment for the Demo Plant will be provided by investors according to the Business Plan developed by the Consortium and by mobilizing the necessary investment support from RSFF. Once completed the FP7 Contract, the DEMO Facility will become a Microalgae Production and Biorefinery Plant with a sustainable activity.









UNIVERSITÀ DEGLI STUDI DI FIRENZE – Italy

ABENGOA BIOENERGIA NUEVAS TECNOLOGIAS SA – Spain

BEN-GURION UNIVERSITY OF THE NEGEV – Israel

FOTOSINTETICA & MICROBIOLOGICA S.R.L. – Italy

EVODOS B.V. – Netherlands

ALGOSOURCE TECHNOLOGIES - France

IN SRL – Italy

HART ENERGY PUBLISHING LP - United States

A & A F. LLI PARODI SPA -Italy

ECOCARBURANTES ESPAÑOLES, S.A. – Spain

COMET

Integrated Infrastructure for CO_2 Transport and Storage in the West MEdiTerranean

INFORMATION

Contract Number

241400

Theme

Energy

Instrument

CP

Total Cost

3.125.087 €

EC Contribution

2.343.129 €

Coordinator EC Contribution

283.696 €

Project Start Date

01-Jan-10

Scientific Coordinator

Dulce Boavida (dulce.boavida@lneg.pt)

LNEG – LAB. NACIONAL DE ENGENHARIA E GEOLOGIA I.P. Estr. do Paço do Lumiar, 22 1649-038 LISBOA

Duration

36 Months

Project Website http://comet.lneg.pt

ABSTRACT (Project Objectives & Description of Work)

Carbon dioxide Capture, Transport and Storage (CCS) is a vital component of a portfolio of low-carbon technologies, as it is able to reduce carbon dioxide (CO₂) emissions substantially from both the energy sector and industry.

The overall objective of COMET was to study the techno-economic feasibility of integrating carbon dioxide transport and storage infrastructures in the West Mediterranean area (Portugal, Spain and Morocco).

The EU FP7 COMET (2010-2012) project paved the road towards CCS development in the West Mediterranean Region (WMR) – Portugal, Spain and Morocco – researching, developing and applying an integrated methodology.

PROJECT RESULTS

Many results have been drawn which are related to physical aspects of the network (e.g. where, when, how large, costs) as well as issues which are encountered during the implementation process. The models and tools developed and data collected within COMET, provide opportunities to further refine these lessons and translate them into a CCS roadmap.







UNIVERSIDADE DE ÉVORA - Portugal
UNIVERSITEIT UTRECHT - Netherlands

INSTITUTO GEOLÓGICO Y MINERO DE ESPAÑA - Spain

BUREAU DE RECHERCHES GEOLOGIQUES ET MINIERES - France

UNIVERSITY MOHAMMED V-AGDAL - Morocco

OFFICE NATIONAL DES HYDROCARBURES ET DES MINES - Morocco

UNIVERSITE MOHAMMED PREMIER 1 - UMP - Morocco

ASATREM SRL - APPLIED SYSTEMS ANALYSES, TECHNOLOGY AND RESEARCH, ENERGY MODELS - Italy

CENTRO DE INVESTIGACIONES ENERGETICAS, MEDIOAMBIENTALES Y TECNOLOGICAS-CIEMAT - Spain

FUNDAÇÃO DA FACULDADE DE CIÊNCIAS E TECNOLOGIA DA UNIVERSIDADE NOVA DE LISBOA. - Portugal

FORSCHUNGSZENTRUM JUELICH GMBH - Germany

EDP - GESTÃO DA PRODUÇÃO DE ENERGIA SA - Portugal

ENDESA GENERACION SA - Spain

GALP ENERGIA SA - Portugal

OFFICE NATIONAL DE L'ELECTRICITÉ - MOFOCCO

TEJO ENERGIA S.A. - Portugal

INSTITUTO NACIONAL DE ENGENHARIA, TECNOLOGIA E INOVAÇÃO - Portugal

DEMOWFLOAT

Demonstration of the WindFloat Technology

INFORMATION

Contract Number

296050

Theme

Energy

Instrument

CP

Total Cost

5.982.249€

EC Contribution

3.563.871 €

Coordinator EC Contribution

1.064.321 €

Project Start Date

15-Jul-11

ScientificCoordinator

João Goncalo Maciel (joaogoncalo.maciel@edp.pt)

EDP - INOVAÇÃO, S.A.

R. Camilo Castelo Branco 43

1050-044 LISBOA

Duration

36 Months

Project Website www.demowfloat.eu

ABSTRACT (Project Objectives & Description of Work)

Demowfloat aims to leverage the Windfloat Pilot project, a floating structure with a 2 MW wind turbine currently being tested in an offshore test site in northern Portugal.

The objective of Demowfloat is to make extensive testing, monitoring and data gathering from the existing pilot project. With the gathered information, it aims to develop essential research and demonstration providing the needed conclusions for scrutiny of the financial sector. This is a crucial step to enable the next stage developments of these technologies.

The main focus areas will be operational and system performance, aging impacts, environmental impacts, resource measurements and accuracy of the predicted energy production, operation and maintenance, logistics, accessibility, bankability and financial model.

PROJECT RESULTS

The Demowfloat project will focus on having results in 3 distinct areas:

- Technology: Validate the installation and operational performance.

 Develop processes and procedures for the Windfloat prototype and establish the parameters for multi-unit installation;
- Industry: Demonstrate and improve the economic viability of the technology, considering infrastructures, installation and operation;
- Economic and social: Validate the design, fabrication and installation approach to create a new viable source of clean energy. Establishment of new codes and standards. Improve the social acceptance of deep offshore energy systems.





PRINCIPLE POWER (EUROPE) LIMITED - United Kingdom

VESTAS WIND SYSTEMS A/S - Denmark

REPSOL NUEVAS ENERGIAS UK Ltd - United Kingdom

SCHEEPSWERF DAMEN GORINCHEM BV-Netherlands

WAVE ENERGY CENTRE - CENTRO DE ENERGIA DAS ONDAS — Portugal

LABORATÓRIO NACIONAL DE ENERGIA E GEOLOGIA I.P. – Portugal

INSTITUTO DE SOLDADURA E QUALIDADE — Portugal

CAIXA BANCO DE INVESTIMENTO SA – Portugal

SGURRENERGY LTD - United Kingdom

ALLIANCE FOR SUSTAINABLE ENERGY LLC - United States

A. SILVA MATOS - ENERGIA, SA - Portugal

INFORMATION

Contract Number

256714

Theme

Energy

Instrument

CP

Total Cost

3.048.444 €

EC Contribution

641.370 €

Coordinator EC Contribution

489.979 €

Project Start Date

1-Oct-10

Scientific Coordinator

Nuno Fernandes (nuno.fernandes@omnidea.net)

OMNIDEA LDA Trav. António Gedeão, 9 3510-017 VISEU

Duration

42 Months

Project Website www.omnidea.net/hawe

ABSTRACT (Project Objectives & Description of Work)

This project studies the use of wind resources at higher altitudes than those in conventional wind turbine. HAWE consists of a buoyant, rotating, cylinder shaped airship anchored to a ground station by a tether cable operating a two phase cycle. During the power production phase, the Magnus effect on the rotating cylinder generates lift, pulling up the tether cable which, at the ground station, is in a winch drum driving a flywheel connected to an alternator producing electricity. When the tether cable is fully unwound, the recovery phase starts - as the cylinder rotation ceases and the cable is reeled back to its initial position decoupled from the flywheel, completing a cycle.

A high security of supply, a cleaner environment, and the possibility to keep Europe as a global leader in wind power, are some benefits of this technology.

PROJECT RESULTS

- Analysis of the gas leak from the air module and the materials aging problem by UV rays in the air module;
- Modelling and implementation of capacity factor and maximum power cycle;
- Demonstration of flight stability and response of the system at the airbase:
- Demonstration of the ability to produce wind energy at a competitive cost with conventional wind turbines.







SVEUCILISTE U ZAGREBU, FAKULTET STROJARSTVA I BRODOGRADNJE - Croatia

DANMARKS TEKNISKE UNIVERSITET -Denmark

EDP INOVACAO SA - Portugal

RAPP HYDEMA AS - Norway

LANKHORST TOUWFABRIEKEN BV - Netherlands

SERVICIOS Y ESTUDIOS PARA LA NAVEGACION AEREA Y LA SEGURIDAD AEURONAUTICA SA - Spain

PROETHANOL2G

Intergration of Biology and Engineering into an Economical and Energ Efficient 2G Bioethanol Biorefinery

INFORMATION

Contract Number

251151

Theme

Energy

Instrument

CP

Total Cost

2.514.172 €

EC Contribution

980.000 €

Coordinator EC Contribution

160.224 €

Project Start Date

01-Nov-10

Scientific Coordinator

Francisco Gírio (francisco.girio@lneg.pt)

LNEG – LAB. NACIONAL DE ENGENHARIA E GEOLOGIA I.P. Estr. do Paço do Lumiar, 22 1649-038 Lisboa

Duration

48 Months

Project Website www.proethanol2g.org

ABSTRACT (Project Objectives & Description of Work)

ProEthanol2G project focuses on the effective integration and development of advanced technologies for the production of second generation (2G) bioethanol, from the most representatives European (wheat straw) and Brazilian (sugarcane bagasse and straw) feedstocks. The project makes use of the IBUS (Integrated Biomass Utilisation System) technology, operating at Inbicon A/S (partner), as reference case for RTD activities in the framework of a 2G Bioethanol Biorefinery, which include:

- Feedstock pre-treatment;
- Conversion technologies for second generation (2G) bioethanol;
- Low-temperature distillation;
- Conversion technologies (using the bioprocess-derived materials) for electricity and other added-value materials;
- Full process integration and sustainability assessment.

PROJECT RESULTS

The main results and the focuses for future work include: (i) optimization of the IBUS technology for the pre-treatment of wheat straw and sugarcane bagasse; (ii) novel methodologies for biomass deconstruction using ionic liquids; (iii) new enzymes and cocktails for enzymatic hydrolysis; (iv) efficient integration of enzymatic hydrolysis under different process configurations; (v) selection and development of cell factories displaying new phenotypes (e.g. new pentose-fermenting yeasts) and adapted to ProEthanol2G pre-treated feedstock; (vi) novel low-temperature and energy-efficient distillation system suitable for enzyme recycling; gasification of lignin pellets for electricity; (vii) lignin recovery towards marketable products; (viii) wastewater valorisation for added value products; (ix) full process integration, including 1G+2G technology in Brazil; (x) sustainability assessment for 2G bioethanol in Europe and 1G+2G bioethanol in Brazil.

Several activities have been developed under coordinated activities with the corresponding Brazilian project.





Inbicon Demonstration Plant - Kalundborg, Denmark





DANMARKS TEKNISKE UNIVERSITET -Denmark

LUNDS UNIVERSITET - Sweden

CENTRO DE INVESTIGACIONES ENERGETICAS, MEDIOAMBIENTALES Y TECNOLOGICAS-CIEMAT - Spain

INBICON A/S - Denmark

FRAUNHOFER-GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V - Germany

UNIVERSITEIT GENT - Belgium

GREENVALUE SA - Switzerland

ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE - Switzerland

HOLM CHRISTENSEN BIOSYSTEMER APS - Denmark

REELCOOP

Research Cooperation in Renewable Energy Technologies for Electricity Generation

INFORMATION

Contract Number

608466

Theme

Energy

Instrument

CP-SICA

Total Cost

7.476.483 €

EC Contribution

5.270.759 €

Coordinator EC Contribution

557.480 €

Project Start Date

01-Sep-13

ScientificCoordinator

Armando Carlos Oliveira (acoliv@fe.up.pt)

UNIVERSIDADE DO PORTO FACULDADE DE ENGENHARIA DEP. ENGENHARIA MECÂNICA Rua Dr. Roberto Frias 4200-465 PORTO

Duration

48 Months

Project Website www.reelcoop.com

ABSTRACT (Project Objectives & Description of Work)

REELCOOP (REnewable Electricity COOPeration) will address 5 areas: photovoltaics (PV), concentrated solar power (CSP), solar thermal (ST), bioenergy and grid integration. The REELCOOP project will develop building integrated PV systems and ST/biomass micro-cogeneration systems, as well as centralised generation of electricity in hybrid solar/biomass power plants.

The overall aim will be to significantly enhance research cooperation and knowledge creation on renewable electricity generation, involving Mediterranean partner countries (MPC), while at the same time developing and testing new energy systems. The proposed systems will be developed in European organisations with collaboration of the MPC, and tested under real-life operating conditions in the Middle East and North Africa region, thus establishing a cooperation network amongst partner countries.

Three novel prototype systems will be developed and tested. Their development will also contribute to bring energy efficient, renewable electricity generation systems to the market.

PROJECT RESULTS

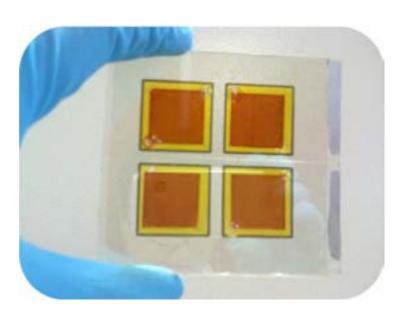
Three novel prototype systems will be developed and tested, representative of both micro-scale (distributed) and large-scale (centralised) approaches to renewable electricity generation: prototypes 1 (BIPV) and 2 (CHP-ORC) are representative of typical micro-generation systems, while prototype 3 (CSP) is representative of a large scale power plant on a reduced scale. The prototypes will be installed during the third year of the project (2015-2016) and tested during the fourth year (2017).

The prototype systems will have a great potential for exploitation/commercialization. The commercialisation of the systems will bring economic and environmental benefits to the EU. The project also includes dissemination and technology transfer of the developed technologies and it will organise four Workshops on renewable electricity technologies (one every year), open to junior researchers and the general public.

REELCOOP shall also establish a roadmap for future cooperation between EU and MPC countries.







THE UNIVERSITY OF READING - United Kingdom

DEUTSCHES ZENTRUM FUER LUFT - UND RAUMFAHRT EV - Germany

UNIVERSIDADE DE ÉVORA - Portugal

CENTRO DE INVESTIGACIONES ENERGETICAS, MEDIOAMBIENTALES Y TECNOLOGICAS-CIEMAT - Spain

ECOLE NATIONALE D'INGENIEURS DE TUNIS - Tunisia

INSTITUT DE RECHERCHES EN ENERGIE SOLAIRE ET ENERGIES NOUVELLES -Morocco

YASAR UNIVERSITESI - Turkey

ONYX SOLAR ENERGY S.L - Spain

MANUEL DA CONCEIÇÃO GRAÇA LTD -Portugal

TERMOCYCLE SP ZOO - Poland

LATERIZI GAMBETTOLA SRL - Italy

ZUCCATO ENERGIA SRL - Italy

ALTERNATIVE ENERGY SYSTEMS SARL - Tunisia

CENTRE DE DEVELOPPEMENT DES ENERGIES RENOUVELABLES CDER - Algeria

SINGULAR

Smart and Sustainable Insular Electricity Grids Under Large-Scale Renewable Integration

INFORMATION

Contract Number

309048

Theme

Energy

Instrument

CР

Total Cost

5.259.446 €

EC Contribution

3.615.465 €

Coordinator EC Contribution

695.980€

Project Start Date

01-Dec-12

Scientific Coordinator

João Catalão

(catalao@ubi.pt)

UNIV. DA BEIRA INTERIOR FACULDADE DE ENGENHARIA DEP. ENG. ELETROMECÂNICA Convento de S^{to}. António 6200-001 COVILHÃ

Duration

36 Months

Project Website www.singular-fp7.eu

ABSTRACT (Project Objectives & Description of Work)

More than other electricity grids, insular electricity grids require the incorporation of sustainable resources and the maximum possible integration of local resources as well as specific solutions to cope with the inherent unpredictability of renewable generation. Therefore, insular electricity grids need a new generation of advanced smart tools, specific rules and services to face the new paradigm of large-scale renewable integration.

The project SiNGULAR aims at providing recommendations as well as scalable and replicable solutions for all regulatory, technical and economic challenges of integrating a large share of renewable energy sources in insular electricity grids, while maintaining secure, reliable and high-quality power. Specifically, it focuses on the development of: (i) smart insular electricity network operation tools; (ii) insular electricity network planning procedures; and (iii) tools for grid integration and insular electricity network grid codes for grid connection of distributed generation plants.

The goal is the generation of effective solutions and information so that the integration of insular and highly variable energy resources will be maximized.

PROJECT RESULTS

The project results arising from different insular electricity grids in five countries across Europe (Azores islands in Portugal, Crete island in Greece, Canary islands in Spain, Pantelleria island in Italy, and the Great Island of Braila in Romania) are expected to open the path for technically and economically viable deployment of smart grids solutions that enable a substantial hosting capacity increase for renewable energy sources in medium, and low-voltage, existing insular networks. This will allow an effective planning of necessary network reinforcements. In addition, it will allow for insular distribution networks to be operated with reverse flows of electricity at times of high renewable electricity generation and low load, while it will also allow for better monitoring and control of distributed generation resources. Finally, it will help increase the reliability of the system through the provision of fast and low-cost reserves from flexible loads, electrical energy storage and plug-in electric vehicles in conjunction with the active participation of the demand-side.







SMARTWATT - ENERGY SERVICES, SA - Portugal

EDA - ELECTRICIDADE DOS ACORES SA - Portugal

ARISTOTELIO PANEPISTIMIO THESSALONIKIS - Greece

PUBLIC POWER CORPORATION S.A. - Greece

UNIVERSIDAD DE CASTILLA - LA MANCHA - Spain

INSTITUTO TECNOLOGICO DE CANARIAS, S.A. - Spain

AGENCIA REGIONAL DE LA ENERGIA DE CASTILLA-LA MANCHA - Spain

POLITECNICO DI TORINO - Italy

WAVE FOR ENERGY S.R.L. - Italy

COMUNE DI PANTELLERIA - Italy

AGENZIA NAZIONALE PER LE NUOVE TECNOLOGIE, L'ENERGIA E LO SVILUPPO ECONOMICO SOSTENIBILE - Italy

ALSTOM (SCHWEIZ) AG - Switzerland

UNIVERSITATEA POLITEHNICA DIN BUCURESTI- Romania

SOCIETATEA COMERCIALA DE DISTRIBUTIE SI FURNIZARE A ENERGIEI ELECTRICE -ELECTRICA SA - Romania

INTELEN SERVICES LIMITED - Cyprus

SuSTAINABLE

Smart Distribution System OperaTion for Maximizing the Integration of Renewable Generation

INFORMATION

Contract Number

308755

Theme

Energy

Instrument

CP

Total Cost

5.725.994€

EC Contribution

3.871.354€

Coordinator EC Contribution

715.300€

Project Start Date

01-Jan-13

Scientific Coordinator

Antonio Aires Messias (aires.messias@edp.pt)

EDP – DISTRIBUIÇÃO de ENERGIA, S.A. R. Camilo Castelo Branco, 43 1050-044LISBOA

Duration

36 Months

Project Website www.sustainableproject.eu

ABSTRACT (Project Objectives & Description of Work)

The SuSTAINABLE project will develop and demonstrate a new operation paradigm, leveraging information from smart meters and short-term localized predictions to manage distribution systems in a more efficient and cost-effective way, enabling a large-scale deployment of variable distributed resources.

The SuSTAINABLE concept also involves an active managemet of distributed flexible resources by Distribution System Operators (DSOs) and a multi-objective, decision-making scheme will be designed to keep network voltage inside operational constraints, minimize operational expenditures, minimize aging of automatic tap changers and maximize the balancing and ancilliary services to be provided to Transmission System Operators (TSOs) when necessary.

PROJECT RESULTS

The SuSTAINABLE project will enable a new set of tools and functionalities that will facilitate the structured and orderly transition from passive distribution networks towards the smart grid paradigm, while bringing better network observability for the DSO, in a way that it will allow a substantial increase of renewable-based medium and small sized distributed genarators (DG), as well as other distributed energy resources (DER) in electrical distribution systems.

The project will contribute to the paradigm shift towards Smart Grids, and will create an add value on the top of already existing Smart Grid reference projects, such as InovGrid, either by directly integrating the new developed tools and functionalities, or by sharing experiences and knowledge with other relevant projects.

INSTITUTO DE ENGENHARIA DE SISTEMAS E COMPUTADORES DO PORTO (INESC PORTO) - Portugal

THE UNIVERSITY OF MANCHESTER - United Kingdom

TECHNISCHE UNIVERSITAT BERLIN - Germany

UNIVERSIDAD PONTIFICIA COMILLAS - Spain

INSTITUTE OF COMMUNICATION AND COMPUTER SYSTEMS - Greece

EFACEC - ENGENHARIA E SISTEMAS SA -Portugal

PUBLIC POWER CORPORATION S.A. - Greece



the INtegration of renewABLE generation







ENVIRONMENT

ASTARTE

Assessment, Strategy And Risk Reduction for Tsunamis in Europe

INFORMATION

Contract Number

603839

Theme

Environment

Instrument

CP

Total Cost

7.884.882 €

EC Contribution

5.999.678 €

Coordinator EC Contribution

820.996 €

Project Start Date

01-Nov-13

Scientific Coordinator

Maria Ana Baptista (mavbaptista@gmail.com)

IPMA - INST. PORTUGUÊS DO MAR E DA ATMOSFERA Rua C do Aeroporto 1749-077 LISBOA

Duration **36 Months**

Project Website www.astarte-project.eu

ABSTRACT (Project Objectives & Description of Work)

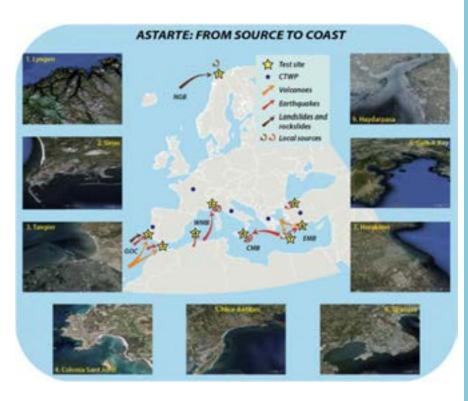
ASTARTE is a consortium of 26 institutions from 16 countries with the main goal of reaching a higher level of tsunami resilience in the North East Atlantic & Mediterranean (NEAM) region, to improve preparedness of coastal populations, and, ultimately, to save lives and assets. ASTARTE will employ lessons on coastal resilience learned from disaster surveys following tsunamis and hurricane surges and will acquire new information to complete the existing European knowledge base. This will involve close cooperation with coastal populations, civil protection, emergency management and other local organizations. ASTARTE considers 9 test sites in the Mediterranean and Northeast Atlantic where interactions with stakeholders and the society at large will take place, and practical applications will be tested.

PROJECT RESULTS

ASTARTE will develop critical scientific and technical elements required for a significant enhancement of the Tsunami Warning System (TWS) in the NEAM region in terms of monitoring, early warning and forecast, governance and resilience. ASTARTE will:

- Improve the knowledge on tsunami generation involving novel empirical data and statistical analyses;
- Develop numerical techniques for tsunami simulation concentrating on real-time codes and novel statistical emulations;
- Refine methods for the assessment of tsunami hazard, vulnerability and risk:
- Produce better tools for forecast and warning tools, for candidate tsunami watch providers, as well as national tsunami warming centers;
- Produce guidelines for tsunami Eurocode Guidelines for decision makers.





FUNDAÇÃO DA FACULDADE DE CIÊNCIAS DA UNIVERSIDADE DE LISBOA - Portugal

MIDDLE EAST TECHNICAL UNIVERSITY - Turkey

BOGAZICI UNIVERSITESI - Turkey

COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES - France

CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE - France

ALMA MATER STUDIORUM-UNIVERSITÀ DI BOLOGNA - Italy

ISTITUTO NAZIONALE DI GEOFISICA E VULCANOLOGIA - Italy

UNIVERSIDAD DE CANTABRIA - Spain

UNIVERSITAT DE BARCELONA - Spain

TECHNICAL UNIVERSITY OF CRETE - Greece

NATIONAL OBSERVATORY OF ATHENS - Greece

UNIVERSITAET HAMBURG - Germany

HELMHOLTZ-ZENTRUM POTSDAM DEUTSCHES GEOFORSCHUNGSZENTRUM - Germany

UNIVERSITAET BREMEN - Germany

STIFTELSEN NORGES GEOTEKNISKE INSTITUTT - Norway

UNIVERSITY COLLEGE DUBLIN, NATIONAL UNIVERSITY OF IRELAND - Ireland

NATURAL ENVIRONMENT RESEARCH COUNCIL – United Kingdom

DANMARKS TEKNISKE UNIVERSITET -Denmark

INSTITUTUL NATIONAL DE CERCETARE-DEZVOLTARE PENTRU FIZICA PAMANTULUI - Romania

SPECIAL RESEARCH BUREAU FOR AUTOMATION OF MARINE RESEARCHES FAR EAST BRANCH RUSSIAN ACADEMY OF SCIENCES - Russia

CENTRE NATIONAL POUR LA RECHERCHE SCIENTIFIQUE ET TECHNIQUE - MOTOCCO

U.S. DEPARTMENT OF COMMERCE – United States

PORT AND AIRPORT RESEARCH INSTITUTE - Japan

UNIVERSITY OF SOUTHERN CALIFORNIA – United States

UNIVERSITY OF TOKYO - Japan

CIRCLE-2

Climate Impact Research & Response Coordination for a Larger Europe

INFORMATION

Contract Number

249685

Theme

Environment

Instrument

CSA-CA

Total Cost

2.271.877 €

EC Contribution

1.999.331 €

Coordinator EC Contribution

615.795 €

Project Start Date

1-May-10

Scientific Coordinator

Tiago Capela Lourenço (tcapela@siam.fis.fc.ul.pt)

FUNDAÇÃO DA FACULDADE DE CIÊNCIAS DA UNIVERSIDADE DE LISBOA Campo Grande, Ed. C1 1749-016 LISBOA

Duration

48 Months

Project Website
www.circle-era.eu

ABSTRACT (Project Objectives & Description of Work)

This is a European network (ERANET) of 34 science funding and management institutions from 23 countries whose main objective is to promote and support RTD on the subject of climate change (CC) adaptation. In order to facilitate transnational coordination and cooperation between national and regional programs, CIRCLE-2 is organized into four modules: LEAD - scientific and technical coordination and project management; DE-SIGN - developing a common research agenda and a joint program of RTD activities; FUND - funding of joint calls and other joint activities that support transnational cooperation; and SHARE - sharing information and knowledge transfer on CC adaptation.

PROJECT RESULTS

CIRCLE-2 produced several types of results:

- a European database of national and local adaptation projects (http://infobase.circle-era.eu/);
- a Climate Adaptation Research Agenda (www.circle-era.eu/np4/CARA)
- transnational joint initiatives (www.circle-era.eu/np4/Joint_Initiatives);
- workshops (www.circle-era.eu/np4/workshops), courses, conferences and publications (www.circle-era.eu/np4/publications).

CIRCLE-2 fosters the planning of joint strategies and policies to adapt to CC at the European level. The coordination of RTD enabled the identification of common needs and options available to the local, regional, national and European authorities. CIRCLE-2 enhances the cooperation between the different national and regional programs on CC and supports the development of a common European strategy to adapt to CC.



CLIMATE IMPACT RESEARCH & RESPONSE COORDINATION FOR A LARGER EUROPE EU FP7 ERA-NET





UMWELTBUNDESAMT GMBH - Austria

FUNDAÇÃO PARA A CIÊNCIA E A TECNOLOGIA - Portugal

CENTRO EURO-MEDITERRANEO PER I CAMBIAMENTI CLIMATICI SCARL - Italy

MINISTÈRE DE L'ECOLOGIE, DU DÉVELOPPEMENT DURABLE ET DE L'ÉNERGIE - France

MINISTERIO DE ECONOMIA E COMPETITIVIDADE - Spain

SVERIGES METEOROLOGISKA OCH HYDROLOGISKA INSTITUT - Sweden

STICHTING KENNIS VOOR KLIMAAT - Netherlands

SUOMEN AKATEMIA - Finland

NATURVARDSVERKET - Sweden

ENVIRONMENTAL PROTECTION AGENCY OF IRELAND - Ireland

DEUTSCHES ZENTRUM FUER LUFT - UND RAUMFAHRT EV - Germany

MARIOLOPOULOS-KANAGINIS FOUNDATION FOR ENVIRONMENT SCIENCES - Greece

FORSKNINGSRÅDET FÖR MILJÖ, AREELLA NÄRINGAR OCH SAMHÄLLSBYGGANDE -Sweden

TURKIYE BILIMSEL VE TEKNOLOJIK ARASTIRMA KURUMU - Turkey

SIHTASUTUS EESTI TEADUSAGENTUUR - Estonia

MINISTRY OF ENVIRONMENTAL PROTECTION - Israel

EIGEN VERMOGEN FLANDERS HYDRAULICS - Belgium

THE SECRETARY OF STATE FOR ENVIRONMENT, FOOD AND RURAL AFFAIRS - United Kingdom

VIDEKFEJLESZTESI MINISZTERIUM -Hungary

LAGOONS

Integrated Water Resources and Coastal Zone Management in European Lagoons in the Context of Climate Change

INFORMATION

Contract Number

283157

Theme

Environment

Instrument

CP-FP

Total Cost

3.338.592 €

EC Contribution

2.545.660 €

Coordinator EC Contribution

512.241 €

Project Start Date

1-Oct-11

Scientific Coordinator

Ana Isabel Lillebø Batista (lillebo@ua.pt)

UNIVERSIDADE DE AVEIRO
DEP. DE BIOLOGIA
Campus de Santiago
3810-193 AVEIRO

Duration

36 Months

Project Website http://lagoons.web.ua.pt

ABSTRACT (Project Objectives & Description of Work)

The main and overall objectives of the LAGOONS project are to develop science-based strategies and decision support frameworks for the integrated management of lagoons, based on an increased understanding of land-sea processes and the science-policy-stakeholder interface. To this end, the project will seek to contribute to the EU Water Framework Directive, the Habitat Directive, the EU's integrated coastal zone management (ICZM) Recommendation, and the EU Marine Strategy Directive.

PROJECT RESULTS

Develop strategies and methodologies for integrated decision support for stakeholders, as well as with a special focus on recommendations of suitable use of ecosystem services, foreseen eco-efficiency of the services and eco-innovation in solutions to overcome or mitigate the services losses due to the changing environment. In management terms, LAGOONS will contribute to the decision-support methodologies for a coordinated approach to the Water Framework Directive and the Marine Strategy Directive. In addition, LAGOONS will propose actions to tackle bottlenecks in the context of climate change, i.e., LAGOONS will propose actions foreseen in the goals of the Europe 2020 strategy - A strategy for smart, sustainable and inclusive growth.

LAGOONS case studies have been selected to represent a set of "hotspot" coastal lagoons with a wide and balanced geographical distribution and different characteristics, namely: Vistula Lagoon in the Baltic Sea (Poland/Russia); Tylygulskyi Lagoon in the Black Sea (Ukraine); Ria de Aveiro Lagoon in the Atlantic Ocean (Portugal), and Mar Menor in the Mediterranean Sea (Spain).







NORWEGIAN INSTITUTE FOR AGRICULTURAL AND ENVIRONMENTAL RESEARCH - BIOFORSK - Norway

INSTYTUT BUDOWNICTWA WODNEGO POLSKIEJ AKADEMII NAUK - Poland

P.P. SHIRSHOV INSTITUTE OF OCEANOLOGY OF RUSSIAN ACADEMY OF SCIENCES - Russia

MORSKI INSTYTUT RYBACKI - PANSTWOWY INSTYTUT BADAWCZY - Poland

UNIVERSITY OF DUNDEE - United Kingdom

ODESSA STATE ENVIRONMENTAL UNIVERSITY - Ukraine

POTSDAM INSTITUT FUER
KLIMAFOLGENFORSCHUNG - Germany

UNIVERSIDAD DE MURCIA - Spain

NETBIOME-CSA

Strengthening European Research Cooperation for Smart and Sustainable Management of Tropical and Subtropical Biodiversity in Outermost Regions and Overseas Countries and Territories

INFORMATION

Contract Number

603710

Theme

Environment

Instrument

CSA-CA

Total Cost

1.121.076 €

EC Contribution

999.615 €

Coordinator EC Contribution

155.737 €

Project Start Date

02-May-13

Scientific Coordinator

José Manuel Azevedo (jose.mn.azevedo@azores.gov.pt)

FUNDO REGIONAL DA
CIÊNCIA E TECNOLOGIA
R. Cons. Dr. Luis Bettencourt 16
9500-058 PONTA DELGADA

Duration **36 Months**

Project Website www.netbiome.eu

ABSTRACT (Project Objectives & Description of Work)

Through a participative process, the objective of the NetBiome-CSA project is to mobilise stakeholders, their knowledge and resources for initiatives such as policy and priority analysis, multi-stakeholder dialogues, exchange of good practices, training and issuing of recommendations. NetBiome-CSA starts from an existing biodiversity research partnership based on the EU outermost regions (ORs) and overseas countries and territories (OCTs), focused on financing high quality research, and takes on the challenge of mobilizing further stakeholders at all the levels of the quadruple helix (knowledge institutions, enterprises, government and civil society) in order to identify, and then to address, perceived priority challenges in conciliating conservation and sustainable management of tropical biodiversity with the sustainable development of Europe's regions and territories, based on the benefits from biodiversity. In doing so, NetBiome-CSA project will facilitate improved knowledge transfer and uptake, provide appropriate tools and models to manage information and data for policy makers, and raise awareness of natural resources, including raw materials.

PROJECT RESULTS

The project's activities will contribute to:

- promote proper research and innovation governance;
- provide the basis for increased research efforts and excellence;
- strengthen links between science, policy and business;
- foster evidence-based policy and improving knowledge, good practice, as well as technology transfer and the uptake of research results by biodiversity actors and stakeholders;
- improve the uptake by research of biodiversity actors and stakeholders knowledge, including traditional knowledge;
- develop innovative biodiversity management tools;
- improve visibility of ORs and OCTs, their specificities, their originality, and the uptake of their good practices and expertise;
- develop international cooperation and exporting EU expertise to third countries, from ORs and OCTs acting as active EU frontiers;
- give a tropical dimension to Europe and conferring upon Europe a particular responsibility;
- establish a sustainable platform acting as an European focal point for tropical and subtropical biodiversity.









AGENCE DE DEVELOPPEMENT ECONOMIQUE DE LA NOUVELLE CALEDONIE ASSOCIATION - New Caledonia

GUADELOUPE REGION - France

REGION REUNION - France

CONSORCIO PARA EL DISENO, CONSTRUCCION, EQUIPAMIENTO Y EXPLOTACION DE LA PLATAFORMA OCEANICA DE CANARIAS - Spain

MINISTERIE VAN ECONOMISCHE ZAKEN - Netherlands

AGENCE NATIONALE DE LA RECHERCHE - France

ECOLOGIC INSTITUT GEMEINNÜTZIGE GMBH - Germany

FUNDAÇÃO EUROCEAN - Portugal

STICHTING NATURALIS BIODIVERSITY CENTER - Netherlands

SOCIEDADE PORTUGUESA DE INOVAÇÃO -CONSULTADORIA EMPRESARIAL E FOMENTO DA INOVAÇÃO S.A. - Portugal

INSTITUTO NACIONAL DE DESENVOLVIMENTO DAS PESCAS - Cape Verde

SYNDICAT MIXTE DU PARC NATUREL REGIONAL DE MARTINIQUE - France



TRANSPORT (INCLUDING AERONAUTICS)

BRAINFLIGHT

Brain Controlled Aircraft Flight Using Multiple Feedback Mechanisms

INFORMATION

Contract Number

308914

Theme

Transport

Instrument

CP-FP

Total Cost

873.657 €

EC Contribution

598.801 €

Coordinator EC Contribution

163.830 €

Project Start Date

01-Jun-2012

Scientific Coordinator

André Oliveira (andre.oliveira@tekever.com)

TEKEVER ASDS Rua das Musas 3.30 1990-113 LISBOA

Duration

24 Months

Project Website www.fp7-brainflight.eu

ABSTRACT (Project Objectives & Description of Work)

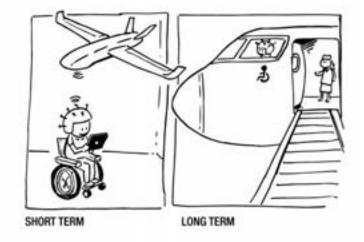
Several studies have revealed that the activity of neurons is sufficiently capable of providing enough data to enable the control of an electronic device using solely signals provided by the brain. Project BRAINFLIGHT proposes the application of this kind of control in the world of aircraft, to enable people to control aircraft using only neural signals emitted from their brain. This kind of approach constitutes a novel concept for the control of these platforms, and was until recently only conceived as science fiction.

PROJECT RESULTS

The goal of project BRAINFLIGHT is to create a novel approach to aircraft control, and to assess the performance of this concept. This project is mainly focused on establishing the best approaches that allow fast learning to control an aircraft using brain signals, while allowing pilots to multitask. Project BRAINFLIGHT will test an innovative approach for brain control of flight, which takes advantage of the amazing ability that the brain has of learning to use novel tools using operant conditioning.



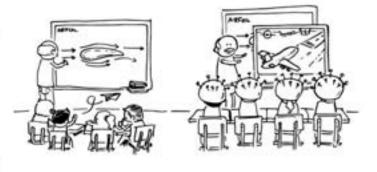
ENHANCED ACCESS TO AIRCRAFT PILOTING



FUNDAÇÃO CHAMPALIMAUD - Portugal GROOTJEN MARC - EAGLESCIENCE -Netherlands

TECHNISCHE UNIVERSITAET MUENCHEN - Germany

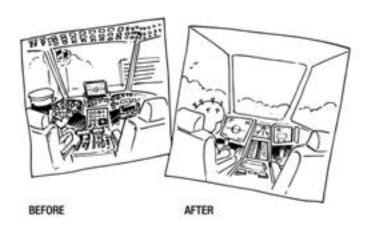




BEFORE

AFTER





CHANGE

Combined morphing Assessment Software Using Flight Envelope Data and Mission Based Morphing Prototype Wing Development

INFORMATION

Contract Number

314139

Theme

Transports

Instrument

CP-FP

Total Cost

4.886.469 €

EC Contribution

3.647.844 €

Coordinator EC Contribution

570.730 €

Project Start Date

01-Aug-12

Scientific Coordinator

David Coimbra (david.coimbra@tekever.com)

TEKEVER ASDS Rua das Musas, 3.30 1990-113 LISBOA

Duration

36 Months

Project Website http://fp7-change.eu

ABSTRACT (Project Objectives & Description of Work)

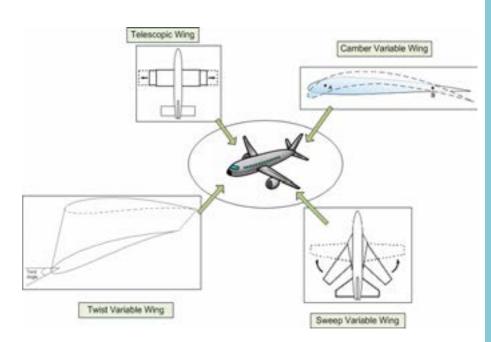
The Morphing effect in aircraft has been studied and used recently in order to increase the aircraft flight envelope. This characteristic is of the utmost importance for the aeronautic world, for it offers greater efficiency, versatility and performance in mission. Moreover, the aircraft's capability to adapt itself to each given situation is prone to attain improved results in a broad range of different missions, avoiding the need for a specific aircraft to conduct a specific mission. The focus of the Project CHANGE is thus to enhance flight performance by changing the shape for flying.

PROJECT RESULTS

The main objective of this project is to study and develop a novel morphing system which integrates up to four different morphing mechanisms into one single wing and to demonstrate this new ability in flight.

This system will bring advantages in performance improvement, achieved by adopting its wing shape in accordance to the mission requirements of each flight phase. Therefore, the CHANGE project envisions the mitigation of the required energy, and thus fuel consumption, to maintain the aircraft's flight and to perform the necessary flight manoeuvres, offering the capacity to mould the aircraft's exterior and enhance flight performance.





DEUTSCHES ZENTRUM FUER LUFT – UND RAUMFAHRT EV - Germany

AIRCRAFT RESEARCH ASSOCIATION LIMITED - United Kingdom

UNIVERSIDADE DA BEIRA INTERIOR - Portugal

CRANFIELD UNIVERSITY - United Kingdom

SWANSEA UNIVERSITY – United Kingdom

INVENT INNOVATIVE
VERBUNDWERKSTOFFEREALISATION UND
VERMARKTUNG NEUERTECHNOLOGIEN
GMBH - Germany

MIDDLE EAST TECHNICAL UNIVERSITY - Turkey

TECHNISCHE UNIVERSITEIT DELFT - Netherlands

INFORMATION

Contract Number

323047

Theme

Transports

Instrument

CP-FP

Total Cost

780.846 €

EC Contribution

599.993 €

Coordinator EC Contribution

162.250 €

Project Start Date

01-Jan-13

Scientific Coordinator

José Carlos Páscoa (pascoa@ubi.pt)

UNIV. DA BEIRA INTERIOR **FACULDADE DE ENGENHARIA** DEP. ENG. ELETROMECÂNICA Convento de Sto. António 6201-001 COVILHÃ

Duration

24 Months

Project Website www.crop.ubi.pt

ABSTRACT (Project Objectives & Description of Work)

The CROP project introduces an innovative propulsion system for aircraft based on the cycloidal rotor concept, using an integrated approach that includes the electric drive train, airframe integration and an environmental friendly energy source. The CROP system is supported on a multi-physics approach: (i) The high thrust obtained by the operation of an unsteadybased cycloidal rotor; (ii) The development of low-weight electric power drives for the system; (iii) The re-design of the airframe to accomplish optimum integration of the cycloidal propulsor; (iv) The incorporation of an environmentally friendly energy source based on hydrogen and photovoltaic cells.

The strengths of the CROP concept are twofold: high thrust levels by using unsteady airflows and low weight by using an integrated design approach between the airframe and the cycloidal propulsor.

PROJECT RESULTS

The expected results of this project are: (i) improvement in aerodynamic efficiency of the cycloidal rotor for application in large vehicles; (ii) integration of low-weight electric drives into the cycloidal propulsion system; (iii) analysis of the more promising configurations for airframe/cycloidal propulsion integration; (iv) assessment and optimization of energy needs for the novel propulsion system.

The possibilities opened by the development of an air vehicle that is capable to attain high subsonic velocities and also capable of vertical takeoff and landing (VTOL) without the need to make a radical reconfiguration of its geometry are enormous: (i) more convenient commercial transportation; (ii) rapid disaster/rescue response; (iii) flexible multimission military defence vehicles; (iv) green friendly vehicles able to be powered by renewable or photovoltaic electricity.

UNIVERSITA DEGLI STUDI DI MODENA E REGGIO EMILIA - Italy

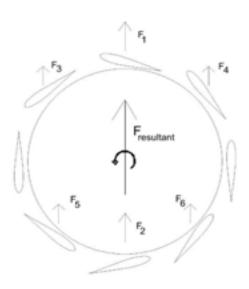
IAT21 - Austria

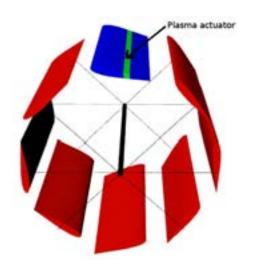
THE UNIVERSITY OF SHEFFIELD - United Kingdom

GROB AIRCRAFT AG - Germany

POLITECNICO DI MILANO - Italy







EDUCAIR

Assessing the Educational Gaps in Aeronautics and Air Transport

INFORMATION

Contract Number

284899

Theme

Transport

Instrument

CSA-SA

Total Cost

596.363 €

EC Contribution

392.142 €

Coordinator EC Contribution

95.921 €

Project Starts

01-Nov-11

Scientific Coordinator

Rosário Macário (rosariomacario@civil.ist.utl.pt)

UNIV. TÉCNICA DE LISBOA
INST. SUPERIOR TÉCNICO
DEP. ENG. CIVIL, ARQUITETURA
E GEORRECURSOS
Av. Rovisco Pais 1
1049-001 LISBOA

Duration

21 Months

Project Website www.educair.eu

ABSTRACT (Project Objectives & Description of Work)

The purpose of EDUCAIR was to improve the match between the needs (demand) in human resources and the educational and training offer (offer) of skills across Europe and other regions in the World. EDUCAIR identified the air transport and aeronautics needs in terms of staff training and education in the horizon of 2020, in order to recommend improvement in the current educational offers.

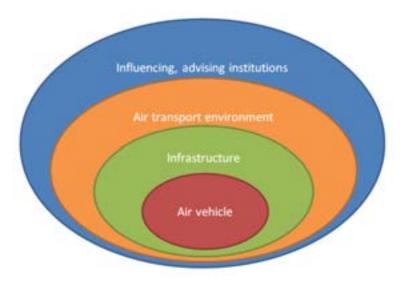
EDUCAIR began by assessing the competence gaps, by using the concept of competence and analysing them from two perspectives – industry (demand) and educational institutions (supply), with the objective of proposing recommendations for improvement. Therefore, the aim of this project was to evaluate the gap between the number of students graduating from European schools and universities, and the requirements for engineers and scientists in European industry, education and research centres, now and in the future.

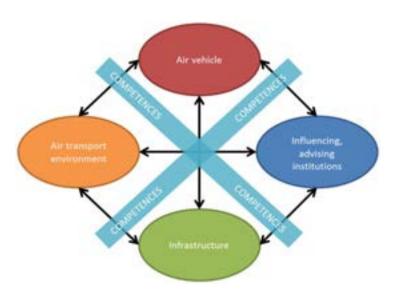
PROJECT RESULTS

To explore the sources and extent of the competence gaps between the needs and offers of competences in the aviation sector, an assessment framework was developed around four areas: (i) the gap between the competences that employees need and the actual competences of the students; (ii) the gap between the knowledge that the companies need and the actual competences of the employees; (iii) the gap between the knowledge that the universities generate and the actual competences of the students; (iv) the gap between the knowledge the companies need and the knowledge the universities have.

The project increased the visibility of European educational offers in the air transport and aeronautic sectors; improved the relevance of the European education offered in these sectors; disseminated new courses and curricula for students and researchers; and contributed to the employability of students.

EDUC/IIR





ATHENS UNIVERSITY OF ECONOMICS AND BUSINESS - RESEARCH CENTER - Greece

UNIVERSITEIT ANTWERPEN - Belgium

UNIVERSIDAD DE LAS PALMAS DE GRAN CANARIA - Spain

TECHNISCHE UNIVERSITEIT DELFT - Netherlands

STICHTING NATIONAAL LUCHT- EN RUIMTEVAARTLABORATORIUM -Netherlands

INFORMATION

Contract Number

247939

Theme

Transports

Instrument

CР

Total Cost

952.708 €

EC Contribution

590.000 €

Coordinator EC Contribution

177.756 €

Project Start Date

01-Feb-10

Scientific Coordinator

Pedro Freire Silva (pedro.silva@deimos.com.pt)

DEIMOS ENGENHARIA S.A.
Av. D. João II, Lote 1.17.01 10°
Edifício Torre Zen
1998-023 LISBOA

Duration

28 Months

Project Website www.encoreproject.org

ABSTRACT (Project Objectives & Description of Work)

The ENCORE project involves the use of Galileo signals for the development of an innovative application for land management in Brazil. Brazilian authorities have in recent years started to implement cadastral surveying of rural properties according to the Geocentric Reference System for the Americas (SIRGAS). Given the vast extent of its territory, there is a significant percentage of land yet to be surveyed, which hampers the effective use of the territory and an optimized planning, as well as also preventing efficient collection of taxes.

In current GNSS terminals, there is a large gap between mass-market and professional devices in terms of performances, receiver complexity and price. The ENCORE project explores this gap using the new possibilities of the Galileo ranging signals, in particular E5 AltBOC and E1 CBOC which provide superior quality, simplifying and reducing operation costs, facilitating large scale surveying in the Brazilian context.

PROJECT RESULTS

The main results that were obtained are summarised next:

- A land management application based on an innovative low-cost GNSS receiver using novel characteristics of MBOC/AltBOC Galileo signals;
- New algorithms for signal acquisition and tracking, and specific positioning algorithms;
- Successful cooperation with international partners during the project development, with involvement in application development, market analysis, demonstration and dissemination activities;
- Transfer the technical expertise acquired in this technology project by DEIMOS, IG, UNESP, and UNOTT, to a successful commercial product with the support of Brazilian companies already positioned in the market (S&C, MundoGEO, ORBISAT);
- Contribution to the adoption of Galileo in Brazil, identifying the main obstacles, possible solutions and understanding of user requirements, legal, regulatory, standardisation and market aspects of surveying applications;
- A dissemination plan, and a business and exploitation plan for optimal exploitation and internationally visible project results.

ENCORE PROJECT





INSTITUTE OF GEOMATICS - Spain

DEIMOS SPACE - Spain

THE UNIVERSITY OF NOTTINGHAM - United Kingdom

UNIVERSIDADE ESTADUAL PAULISTA - Brazil

ORBISAT DA AMAZÔNIA INDÚSTRIA E AEROLEVANTAMENTO - Brazil

SANTIAGO & CINTRA IMPORTAÇÃO E EXPORTAÇÃO LTDA. - Brazil

EDITORA MUNDO GEO LTDA. - Brazil

FLY HIGHER

Shaping the New Evolving Generation of Aeronautic Professionals

INFORMATION

Contract Number

314383

Theme

Transport

Instrument

CSA-SA

Total Cost

620.202 €

EC Contribution

479.843 €

Coordinator EC Contribution

127.533 €

Project Start Date

01-Jun-2012

Scientific Coordinator

Joana Soares

(joana.soares@inovamais.pt)

INOVAMAIS - SERVIÇOS DE

CONSULTADORIA EM

INOVAÇÃO TECNOLÓGICA S.A.

Centro de Inovação de Matosinhos

Rua Dr. Afonso Cordeiro, 567

4450-309 MATOSINHOS

Duration

24 Months

Project Website www.flyhigher.eu

ABSTRACT (Project Objectives & Description of Work)

The main aim of the FLY HIGHER project is to attract, motivate and encourage young Europeans to embrace future careers in the field of Aeronautics. It will do it by raising awareness of young people about future career paths in aeronautics and by fostering a close, open, informal dialogue and sustained interactions and networking activities between the aeronautics research community, industry and the scholar community (in particular primary and secondary schools).

PROJECT RESULTS

The "FLY HIGHER - Shaping the new evolving generation of aeronautic professionals" project plans to give a relevant contribute to raising the interest of young Europeans for engineering activities in the field of aeronautics with the aim of attracting them at a later stage to scientific and technical careers in the aeronautical sector and therefore contribute to the growth of skilled employment and competitiveness of Europe. The FLY HIGHER will promote a wide range of well-balanced activities, the "FLY HIGHER MISSION – Pathway to Success", that valorise the scholar community's roles for important future decisions that bring awareness to careers in the field of Aeronautics, and that motivate young Europeans to embrace future paths in this field. More specifically, the FLY HIGHER MISSION comprises a set of differentiated activities that intent to reach three main target groups: Children and youth; Teachers and educators; Counsellors and Career Advisors.



UNIVERSIDAD POLITECNICA DE MADRID - Spain

COVENTRY UNIVERSITY - United Kingdom

UNIVERSITE PAUL SABATIER TOULOUSE III - France

BOEING RESEARCH & TECHNOLOGY EUROPE S.L.U. - Spain

EUROPEAN SCHOOL HEADS ASSOCIATION - Netherlands





FOUL-X-SPEL

Environmentally Friendly Antifouling Technology to Optimise the Energy Efficiency of Ships

INFORMATION

Contract Number

285552

Theme

Transport

Instrument

CP-FP

Total Cost

3.703.250 €

EC Contribution

2.634.570 €

Coordinator EC Contribution

527.174 €

Project Start Date

1-Dec-11

Scientific Coordinator

João Moura Bordado (jcbordado@ist.utl.pt)

UNIV. TÉCNICA DE LISBOA INST. SUPERIOR TÉCNICO DEP. ENGENHARIA QUÍMICA Av. Rovisco Pais 1 1049-001 LISBOA

Duration

36 Months

Project Website www.foulxspel-antifouling.com

ABSTRACT (Project Objectives & Description of Work)

The basic idea of this project concerns the modification of the usual ships' hulls surface by adding a new antifouling coating by fixing covalently bioactive molecules, which can provide biocide activity, in order to avoid leaching and to promote a long-term effect of surface protection. The new surface coating technology will minimize the surface roughness and improve the hydrodynamic hulls' properties.

This project also aims to demonstrate that the use of non-dangerous biocides is an environmental advantage since there won't be soils and water contamination during the service, repaint and removal of coating waste from the hull. The recycling of coating waste will be studied in order to find a better alternative than the disposal in industrial landfills.

PROJECT RESULTS

The main results expected of the innovative ship coating can be summarized as follow:

- To reduce emissions and to optimize energy efficiency of existing ships through improved hull-propulsion interactions by means of low friction antifouling coatings to reduce fuel consumed by the ships;
- To assure enough resistance to impact, wear, corrosion and their interaction to increase the lifetime of the paint;
- To provide environmentally friendly novel coating materials and surfaces;
- To develop and validate an on-field innovative new coating finishing with longer protection cycles in compliance with owner demands, International Maritime Organization rules and EU and International Regulations;
- To improve the ship management and reduce overall costs;
- To reduce the immobilization period in dry docks for hull repaints.

FoulXSpel











ESTALEIROS NAVAIS DE PENICHE, S.A. - Portugal

HEMPEL A/S - Denmark

FUNDACION TEKNIKER - Spain

UNIVERSITY OF STRATHCLYDE - United Kingdom

INSTITUTO DE SOLDADURA E QUALIDADE - Portugal

CARNIVAL PLC - United Kingdom

LLOYD'S REGISTER EMEA - United Kingdom

UNIVERSITY OF SOUTHAMPTON - United Kingdom

NATIONAL TECHNICAL UNIVERSITY OF ATHENS - Greece

FUTURAIL

Job Opportunities for the Railway Community of Tomorrow

INFORMATION

Contract Number

218596

Theme

Transport

Instrument

CSA-SA

Total Cost

262.080 €

EC Contribution

262.080 €

Coordinator EC Contribution

80.849 €

Project Start Date

01-Jan-09

Scientific Coordinator

Manuel Seabra Pereira (mpereira@dem.ist.utl.pt)

UNIV. TÉNCINA DE LISBOA INST. SUPERIOR TÉCNICO DEP. ENG. MECÂNICA Av. Rovisco Pais 1 1049-001 LISBOA

Duration

18 Months

Project Website www.oleracel.eu

ABSTRACT (Project Objectives & Description of Work)

FUTURAIL aimed at contributing to the enhancement of the railway sector by fostering a better match between the human resources needs to make railways a more competitive and innovative sector and the offer of skills coming out of the different research based education and training institutions across Europe.

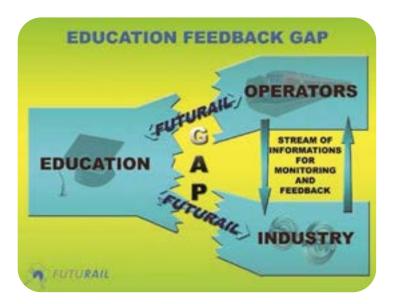
The main and overall objectives of the FUTURAIL project were to:

- disseminate the social, economic and industrial benefits of education and research in the railway sector and promote the idea that society needs advanced technologies and further education as applied to a highly innovative and technologically developed sector;
- identify and develop actions promoting and supporting women participation for the benefit of outstanding railway transport research.

PROJECT RESULTS

The implementation of the FUTURAIL project had several results, such as the dissemination of the railways' vision, the intense on-going change process and the good practices in the sector. FUTURAIL highlighted the social and industrial benefits accruing from rail to further develop the European Union, and it demonstrated and disseminated the need for advanced high technology railway engineering as well as the need for additional domains of knowledge that should complement it. FUTURAIL also incentivized the creation of more job opportunities in the sector resulting from the transfer of knowledge from the research domain to the railway companies.





UNION INTERNATIONALE DES CHEMINS DE FER - UIC - France

EURNEX E. V. - Germany

TSB INNOVATIONSAGENTUR BERLIN GMBH - Germany

CONSORZIO NAZIONALE INTERUNIVERSITARIO PER I TRASPORTI E LA LOGÌSTICA - Italy

HERMES

High Efficient and Reliable ArrangemEnts for Cross-Modal Transport

INFORMATION

Contract Number

234083

Theme

Transport

Instrument

CP-FP

Total Cost

1.838.284 €

EC Contribution

1.256.939 €

Coordinator EC Contribution

224.786 €

Project Start Date

01-Jan-10

Scientific Coordinator

Rosário Macário (rosariomacario@civil.ist.utl.pt)

UNIV. TÉCNICA DE LISBOA INST. SUPERIOR TÉCNICO DEP. ENG. CIVIL ARQUITETURA E GEORRECURSOS Av. Rovisco Pais, 1 1049-001 LISBOA

Duration

24 Months

Project Website www.hermes-7fp.eu

ABSTRACT (Project Objectives & Description of Work)

The objective of HERMES was the development and analysis of new mobility schemes and related organisational patterns at the interface and interconnection between long distance transport networks and local/regional transport networks of all modes. The aim of HERMES was to develop prototypes of suitable business models for intermodal or interconnecting services that could contribute to building sustainable mobility solutions.

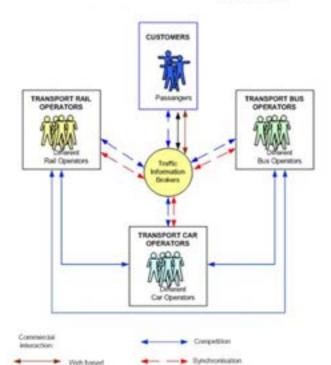
Therefore, this project analysed the existing connections and evaluated the level of interconnectivity in the passenger terminals, where short and long distance transport networks cross and where fluidity between crossing networks should ensure the maintenance of the level of service, when the passenger is transferred from one to the other. Prototypes of business models were examples that represent core aspects of a business, including purpose, offerings, strategies, infrastructure, organisational structures, trading practices, and operational processes and policies.

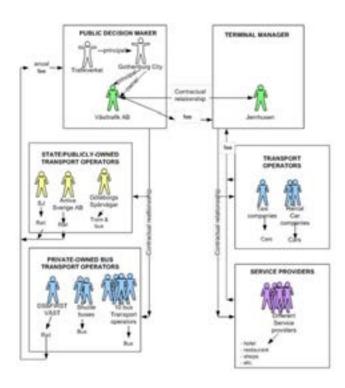
PROJECT RESULTS

HERMES had a very high impact by achieving fluid mobility chains with a clear contribution to the quality perception of passengers.

The analyses embraced: interfaces and interconnections between different modes (rail/urban transport or air/rail); interfaces and interconnections between different types of services of the same mode (rail services/regional rail or urban bus/express coach) interfaces; interconnections between high capacity mode and low capacity, such as long-distance rail or coach/taxis, etc. One of the major impacts of this project was the production of a handbook with good practices that will enable the concrete dissemination of new knowledge achieved through the development of case studies. Impact on industry and society at large was ensured through the participation and support of industry members in the case studies and also on the advisory board.







KARLSRUHER INSTITUT FUER TECHNOLOGIE - Germany

UNIVERSITEIT ANTWERPEN - Belgium

CENTRE FOR RESEARCH AND TECHNOLOGY HELLAS - Greece

UNIVERSITY OF THE AEGEAN-RESEARCH UNIT - Greece

UNIVERSITÀ DEGLI STUDI DI GENOVA - Italy

UNIVERZITA PARDUBICE - Czech Republic

CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE - France

STRATA GESELLSCHAFT FÜR DATEN- UND INFORMATIONSMANAGEMENT MBH -Germany

TRANSPORTFORSKNINGSGRUPPEN I BORLANGE AB - Sweden

UNIVERSIDAD POLITECNICA DE MADRID - Spain

INTERAIL

Development of a Novel Integrated Inspection System for the Accurate Evaluation of the Structural Integrity of Rail Tracks

INFORMATION

Contract Number

234040

Theme

Transport

Instrument

CP-FP

Total Cost

4.991.523 €

EC Contribution

3.281.750 €

Coordinator EC Contribution

520.240 €

Project Start Date

1-Oct-09

Scientific Coordinator

Margarida Pinto Maria (mmpinto@isq.pt)

ISQ – INSTITUTO DE SOLDADURA E QUALIDADE Av. Prof. Dr. Cavaco Silva, Talaide, Taguspark, 33 2740-120 PORTO SALVO

Duration

42 Months

Project Website www.interailproject.eu

ABSTRACT (Project Objectives & Description of Work)

The aim of INTERAIL consortium was to develop and implement an integrated high speed inspection system based on a modular design, to enable a more reliable inspection of rail tracks at faster speeds compared to the current methodologies and procedures.

INTERAIL sought to eliminate rail failures by developing and successfully implementing an integrated high-speed system for the fast and reliable inspection of rail tracks. The application of the high-speed system was complemented through the implementation of novel semi-automated testing equipment which was deployed for the verification and evaluation of the defects detected during the high-speed inspection.

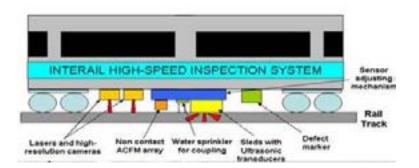
The implementation of the INTERAIL system provided a step change in rail inspection practices currently employed by the rail industry through the development of a novel inspection approach integrating different advanced techniques in a single vehicle, leading to higher levels of reliability and safety.

PROJECT RESULTS

The project demonstrated that with the integrated high-speed system it's possible to have a more reliable and accurate data collection proving its higher quality and reliability inspection compared to the manual procedures. The INTERAIL project developed:

- a high speed automated Inspection equipment integrating several nondestructive tests techniques;
- a new intelligent software and control unit; manual equipment for faster and efficient inspections; a reduction of costs, time and accident probability;
- an increase of Defect Identification Probability (DIP) and a reduction of Failure Probability (FP);
- training of operators and certification procedures.







ALFA PRODUCTS AND TECHNOLOGIES - Belgium

TECHNICAL SOFTWARE CONSULTANTS LTD - United Kingdom

TECNOGAMMA S.P.A. - Italy

MER MEC FRANCE - France

REDE FERROVIÁRIA NACIONAL - Portugal

ENVIROCOUSTICS A.B.E.E. - Greece

FELDMAN ENTERPRISES LIMITED - Cyprus

SOCIETE DES TRANSPORTS INTERCOMMUNAUX DE BRUXELLES SSF -Belgium

THE UNIVERSITY OF BIRMINGHAM - United Kingdom

TWI LIMITED - United Kingdom

COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES - France

NATIONAL AND KAPODISTRIAN UNIVERSITY OF ATHENS - Greece

MARKET-UP

Transport Research Market Uptake

INFORMATION

Contract Number

265841

Theme

Transport

Instrument

CSA-SA

Total Cost

891.118 €

EC Contribution

762.630 €

Coordinator EC Contribution

177.462 €

Project Starts

1-Oct-10

Scientific Coordinator

Daniela Carvalho (daniela.carvalho@tis.pt)

TIS.PT – CONSULTORES EM TRANSPORTES, INOVAÇÃO E SISTEMAS, SA Av. Marquês de Tomar 35, 6° 1000-285 LISBON

Duration

24 Months

Project Website www.market-up.org

ABSTRACT (Project Objectives & Description of Work)

The MARKET-UP project had its focus on the process of innovation in transport, on its absorption by the markets and, in particular, on the role of SMEs on that process. Its objectives were:

- To get a better understanding of the context in which research funding for transport takes place in Europe for the different transport modes, including concentration patterns in terms of actors (role and weight of big companies versus SMEs);
- To derive conclusions as to what drives or hampers the development and uptake of transport technologies;
- To develop insights into which policy instruments could be usefully applied to respond to the drivers and address the barriers such that faster progress can be achieved with the introduction and uptake of transport technologies;
- To identify and define the roles of the actors and regions involved in these actions.

PROJECT RESULTS

This project achieved the following results:

- Development of a model analysis of transport based innovation on the Sectorial Innovation System (SIS) and on the Technological Innovation System (TIS);
- Stimulation of the trends and innovation policy priorities for all modes of transport;
- Mapping of transport research stakeholders for all modes in the 27 members states;
- Identification of barriers faced by SMEs in research on transport;
- Development of key tools and models to finance innovation in the transport sector;
- Seven show cases illustrating the uptake of transport innovations in the market.







COMITE DE LIAISON DE LA CONSTRUCTION D'EQUIPEMENTS ET DE PIECES D'AUTOMOBILES CLEPA AISBL* -Belgium

EUROPEAN MARINE EQUIPMENT COUNCIL/CONSEIL EUROPEEN DE L'EQUIPMENT NAVAL - Belgium

INNOVA SPA - Italy

FRAUNHOFER-GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V - Germany

BUDAPESTI MUSZAKI ES GAZDASAGTUDOMANYI EGYETEM -Hungary

INOVAMAIS - SERVIÇOS DE CONSULTADORIA EM INOVAÇÃO TECNOLÓGICA S.A. - Portugal

ZILINSKA UNIVERZITA V ZILINE - Slovakia

UNIVERSITEIT ANTWERPEN - Belgium

MAXBE

Interoperable Monitoring, Diagnosis and Maintenance Strategies for Axle Bearings

INFORMATION

Contract Number

314408

Theme

Transports

Instrument

CP-FP

Total Cost

4.595.999 €

EC Contribution

3.000.000 €

Coordinator EC Contribution

299.665 €

Project Start Date

01-Nov-12

Scientific Coordinator

Cecília Vale (cvale@fe.up.pt)

UNIVERSIDADE DO PORTO FACULDADE DE ENGENHARIA DEP. ENGENHARIA CIVIL Rua Campo Alegre 687 4169-007 PORTO

Duration

36 Months

Project Website http://paginas.fe.up.pt/~maxbe

ABSTRACT (Project Objectives & Description of Work)

The objective of the MAXBE project is to provide demonstrated concepts, strategies and guidelines for the monitoring and diagnosis of interoperable axle bearings to allow railway operators and managers dealing with the threats caused by axle bearing defects to take preventive action and avoid accidents.

The MAXBE project focuses on detecting axle bearing failure modes at an early stage and on characterizing the axle bearing degradation process. To fulfil the objectives it is essential:

- to explore in combination the monitoring technology of both on-board and track side systems;
- to integrate into condition based models the actual status and degradation modes of the axle bearing.

PROJECT RESULTS

Laboratory tests were performed for:

- the analysis of real bearing failures and of lubricant degradation during and after service;
- the bearing/grease reliability and maintenance data to be incorporated in the RAMS model;
- the correlation between real bearing operating parameters and model prediction, related to temperature, vibration, dynamic loading and grease ageing.

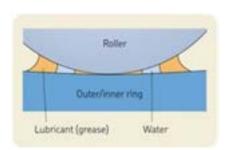
The project outcomes shall be:

- Development of wayside and on-board prototypes for testing on measurement sites to be installed in Portugal and Belgium;
- Integration of the monitoring systems;
- Development of the model prototypes.

The MAXBE project will have impact in the reliability, availability, maintainability and safety (RAMS) of rolling stock and infrastructure, focused on the axle bearings.



Rolling Stock Infrastructure **Traffic Managers** Maintenance Operators Managers Operators Operators MAXBE Monitoring System Integration Wayside Monitoring System On-board Monitoring System MAXBE Wayside Station N MAXBE Wayside Station 2 MAXBE MAXBE On-board On-board On-Board Train-System N Trais-System 1 Train-System 2 MAXBE Wayside Station 1





PARTNERS

REDE FERROVIÁRIA NACIONAL - Portugal

ANSALDO STS S.P.A. - Italy

TECHNISCHE UNIVERSITAT BRAUNSCHWEIG - Germany

COMSA SAU - Spain

UNIVERSITY COLLEGE CORK, NATIONAL UNIVERSITY OF IRELAND - Ireland

EVOLEO TECHNOLOGIES LDA - Portugal

NUEVAS ESTRATEGIAS DE MANTENIMIENTO S.L. - Spain

MER MEC SPA - Italy

SKF INDUSTRIE SPA - Italy

INSTITUTO SUPERIOR TÉCNICO - Portugal

DYNAMICS, STRUCTURES AND SYSTEMS INTERNATIONAL - Belgium

VLAAMSE VERVOERSMAATSCHAPPIJ DE LIJN - Belgium

EMEF, SA - EMPRESA DE MANUTENÇÃO DE EQUIPAMENTO FERROVIÁRIO, SA -Portugal

I-MOSS NV - Belgium

KRESTOS LIMITED – United Kingdom

THE UNIVERSITY OF BIRMINGHAM - United Kingdom

NOVEMOR

Novel Air Vehicle Configurations: From Fluttering Wings to Morphing Flight

INFORMATION

Contract Number

285395

Theme

Transport

Instrument

CP-FP

Total Cost

2.569.546 €

EC Contribution

1.915.458 €

Coordinator EC Contribution

463.687 €

Project Start Date

1-Sep-11

Scientific Coordinator

Afzal Suleman (suleman@ist.utl.pt)

UNIV. TÉCNICA DE LISBOA INST. SUPERIOR TÉCNICO DEP. ENG. MECÂNICA Av. Rovisco Pais 1 1049-001 LISBOA

Duration

36 Months

Project Website www.novemor.eu

ABSTRACT (Project Objectives & Description of Work)

The aim of the NOVEMOR research project is to investigate novel air vehicle configurations with new lifting concepts and morphing wing solutions to enable cost-effective air transportation. The design and development of the proposed solutions will be an integral part of the aircraft's conceptual design, rather than just as an add-on later in the design cycle.

Therefore, the project will focus on the following primary objectives:

- To design and evaluate a new aircraft concept that includes structural, aerodynamic and aero-elastic scaling simulations and analysis, and multidisciplinary design optimisation techniques;
- To propose morphing wing solutions to enhance lift capabilities and manoeuvring;
- To design, test and evaluate novel configurations and adaptive/morphing concepts and mechanisms capable to reduce drag, load, weight and noise impact.

PROJECT RESULTS

The expected results with this project are:

- modelling capabilities integrated into simulation and multidisciplinary design optimization numerical tools to allow the use of adaptive and morphing technologies from the beginning of the design process;
- add value to the outcome of the project in order to enable realistic tests of the proposed morphing concepts;
- development of a wind-tunnel test to measure time-dependent pressure distributions typical of those associated with rapid wing geometry morphing.

POLITÈCNICO DI MILANO - Italy UNIVESITY OF BRISTOL - United Kingdom

KUNGLIGA TEKNISKA HOEGSKOLAN -Sweden

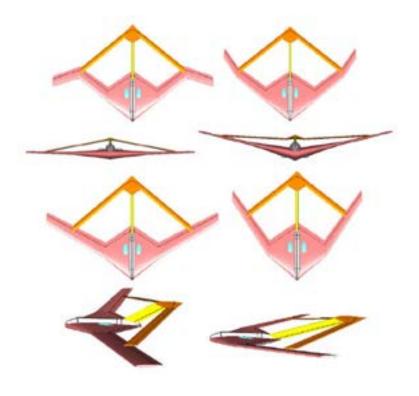
DEUTSCHES ZENTRUM FUER LUFT - UND RAUMFAHRT EV - Germany

COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH - South Africa

EMBRAER SA - Brazil







SAFEPEC Innovative risk-based tools for ship safety inspection

INFORMATION

Contract Number

605081

Theme

Transports

Instrument

CP

Total Cost

3.600.000 €

EC Contribution

2.500.000 €

Coordinator EC Contribution

141.000 €

Project Start Date

01-Out-14

Scientific Coordinator

Hugo Diogo

(hugo.diogo@glintt.com)

GLINTT INOV, S.A **GLOBAL INTELLIGENT TECHNOLOGIES** Qta da Beloura Beloura Office Park - Edf.10 2710-693 SINTRA

Duration

36 Months

Project Website www.safepec.eu

ABSTRACT (Project Objectives & Description of Work)

Ships are subject to inspections from different stakeholders, such as port authorities, classification societies, ship owners, managers and operators, among others. Each one has its own inspection method depending upon its role in the vessel operation. Consequently, all inspections monitor the ship condition and report the respective data. However, there are no means today to interrelate the data that are systematically collected by the various stakeholders. In fact, few studies have investigated the effectiveness of the different inspections methods. Therefore, it is uncertain to which extent the current inspection regimes are contributing to reduce accidents.

Risk assessment methodologies are based on the systematic or quantitative collection of potential hazards and end up with qualitative measures to eliminate or reduce these hazards. The SAFEPEC project aims to promote proactive safety and develop a 'unified risk-based framework' built upon the analysis of historical data of casualties, near miss cases, deficiencies and non-conformities that are detected by various types of inspections.

PROJECT RESULTS

SAFEPEC will provide a complete risk driven framework which can subsequently be the basis for multiple solutions in the domain of maritime inspections. New standards for ship safety data management will be produced, in particular for ship inspection and ship safety status. The new standards will be made available to stakeholders, including standards organizations as an add-on to on-going work.

Another outcome of the project will be a software prototype that enables the interoperability and coherent interpretation of various data sources; and can contribute to the early detection of failure, both in the ship structure or its equipment.

Workshops and other engagement activities will be organised to collect the stakeholder views about the products developed during the project in order to obtain a set of recommendations for proactive ship inspection

A major benefit of SAFEPEC will be the reduction of ship lifecycle costs, because inspection and repair intervals would be based upon the risk, combining failure occurrence probability and consequences, rather than on arbitrary inspection periods.



DET NORSKE VERITAS AS - Norway

IHS GLOBAL SAS - France

NEDERLANDSE ORGANISATIE VOOR TOEGEPAST NATUURWETENSCHAPPELIJK ONDERZOEK – TNO - Netherlands

NORSK MARINTEKNISK FORSKNINGSINSTITUTT AS - Norway

TECHNISCHE UNIVERSITAET MUENCHEN - Germany

NATIONAL TECHNICAL UNIVERSITY OF ATHENS - Greece

WORLD MARITIME UNIVERSITY - Sweden









SKILLRAIL

Education and Training Actions for High Skilled Job Opportunities in the Railway Sector

INFORMATION

Contract Number

233649

Theme

Transport

Instrument

CSA-SA

Total Cost

483.941 €

EC Contribution

454.525 €

Coordinator EC Contribution

91.002 €

Project Start Date

1-Dec-09

Scientific Coordinator

Manuel Seabra Pereira (mpereira@dem.ist.utl.pt)

UNIV. TÉNCINA DE LISBOA INST. SUPERIOR TÉCNICO DEP. ENG. MECÂNICA Av. Rovisco Pais 1 1049-001 LISBOA

Duration

24 Months

Project Website www.skillrail.eu

ABSTRACT (Project Objectives & Description of Work)

The purpose of this project was to build the necessary conditions, namely in training programmes, to develop the appropriate scientific and technological skills for the railway sector of the future taking into account the needs of individual stakeholders.

A partnership for innovation, skills development and jobs was envisaged to get the different players to work together in a collective effort to spread ownership and excellence. The results of a networking process to produce increased detailed knowledge of the industry's needs created the needed conditions to explore ways to satisfy these needs through the known existing landscape of competences across Europe. Based on the knowledge, experience and human resources in European universities, SKILLRAIL founded the EURAIL University, a virtual university that aspires to foster excellence at European level by gathering the different relevant organizations and institutions around an educational project suitable for the needs of the European Rail sector.

PROJECT RESULTS

The SKILLRAIL project:

- supported the dissemination of the railway vision and the intense ongoing process of change;
- highlighted the social and industrial benefits accumulated from rail sector to further develop the EU;
- demonstrated and disseminated the need for advanced high-technology engineering in the future of railways and additional knowledge areas that should complement engineering;
- showed that new job opportunities will be open in the transport sector as a result of the transfer of knowledge from the research domain to the companies.

The involvement of EURNEX guaranteed the access to a fully-fledged association of well recognised research experts in several railway domains.







CONSORZIO NAZIONALE INTERUNIVERSITARIO PER I TRASPORTI E LA LOGÌSTICA - Italy

TSB INNOVATIONSAGENTUR BERLIN GMBH - Germany

UNION INTERNATIONALE DES CHEMINS DE FER - UIC - France

EURNEX E. V. - Germany

UNIVERZITA PARDUBICE - Czech Republic

KØBENHAVNS UNIVERSITET - Denmark

ALSTOM TRANSPORT S.A. - France

UNION DES INDUSTRIES FERROVIAIRES EUROPEENNES - UNIFE - Belgium

TRAFIKVERKET - TRV - Sweden

STAR-NET TRANSPORT

European Network to Support the Sustainable Surface Transport SMEs

INFORMATION

Contract Number

218605

Theme

Transport

Instrument

CSA-SA

Total Cost

1.033.701 €

EC Contribution

923.720 €

Coordinator EC Contribution

225.097 €

Project Start Date

1-May-08

Scientific Coordinator

Pedro Soutinho (pedro.soutinho@inovamais.pt)

INOVAMAIS - SERVIÇOS DE

CONSULTADORIA EM

INOVAÇÃO TECNOLÓGICA S.A.

Centro de Inovação de Matosinhos

Rua Dr. Afonso Cordeiro, 567

4450-309 MATOSINHOS

Duration

33 Months

Project Website www.starnet-transport.eu

ABSTRACT (Project Objectives & Description of Work)

The main objective of the Star-Net Transport project was to increase the participation of surface transport-related SMEs (Small and Medium Enterprises) in the Sustainable Surface Transport Programme (SST) of FP7.

The specific objectives of this project could be summarised as follows: (i) identify the barriers to SME participation in SST collaborative projects; (ii) identify potential co-operation partnerships through technological audits; (iii) build SME profiles to involve them in the supply chains of key transport players; (iv) implement a full range of services and tools for SMEs; (v) facilitate the participation of SMEs in FP7; (vi) analyse and disseminate existing research and technological development results.

PROJECT RESULTS

The project had a direct impact in strengthening the competitiveness of SMEs in the European Union transport sector by encouraging and supporting the participation of SMEs in FP7, thereby contributing to the increase in the participation rate of these SMEs in European programs.

The project created a network of local agents with experience in this area to provide support to the transport sector SMEs in developing their innovation projects, including: identifying perceptions and experiences on SME participation in FP7; raising the knowledge about on-going research activities in the SST domain; promoting the establishment of strong technological RTD links; connecting companies with similar or complementary needs.

The project reached the following quantifiable results: 16 Local Workshops, 420 company visits, 420 advise sessions with the SMEs, 70 ideas for new proposals identified, 100 Technology Assessment Reports, 100 SST SMEs profiles built and disseminated.





FUNDACION CIDAUT - Spain

INSTYTUT PODSTAWOWYCH PROBLEMOW TECHNIKI POLSKIEJ AKADEMII NAUK -Poland

FUNDACJA UNIWERSYTETU IM ADAMA MICKIEWICZA W POZNANIU - Poland

CLIFF FUNNELL ASSOCIATES - United Kingdom

AGENZIA PER LA PROMOZIONE DELLA RICERCA EUROPEA - Italy

SENTERNOVEM - Netherlands

UNIUNEA ROMANA DE TRANSPORT PUBLIC ASOCIATIEI - Romania

TURKIYE BILIMSEL VE TEKNOLOJIK ARASTIRMA KURUMU - Turkey

APPLIED RESEARCH AND COMMUNICATIONS FUND - Bulgaria

GOSPODARSKO INTERESNO ZDRUZENJE ACS SLOVENSKI AVTOMOBILSKI GROZD -Slovenia

VIESOJI ISTAIGA SOCIALINES IR EKONOMINES PLETROS CENTRAS -Lithuania

ZILINSKA UNIVERZITA V ZILINE - Slovakia

COMITE DE LIAISON DE LA CONSTRUCTION D'EQUIPEMENTS ET DE PIECES D'AUTOMOBILES CLEPA AISBL* -Belgium

EUROPEAN MARINE EQUIPMENT COUNCIL/CONSEIL EUROPEEN DE L'EQUIPMENT NAVAL - Belgium

NEMZETI INNOVACIOS HIVATAL - Hungary

TECH-CLINIC SST

Technological Clinics Café Scientifics

INFORMATION

Contract Number

217980

Theme

Transport

Instrument

CSA-SA

Total Cost

530.174 €

EC Contribution

365.029 €

Coordinator EC Contribution

115.457 €

Project Start Date

1-Apr-08

Scientific Coordinator

Pedro Soutinho (pedro.soutinho@inovamais.pt)

INOVAMAIS - SERVIÇOS DE

CONSULTADORIA EM

INOVAÇÃO TECNOLÓGICA S.A.

Centro de Inovação de Matosinhos

Rua Dr. Afonso Cordeiro, 567

4450-309 MATOSINHOS

Duration

19 Months

Project Website www.techclinic.eu

ABSTRACT (Project Objectives & Description of Work)

In some sectors, such as rail and road transport, there have been shortages of qualified personnel. This indicates a serious mismatch between educational output and employers' needs, most acutely in engineering and technical skills.

TECH-CLINIC SST contributed to change young people's attitude towards the Surface Transport Industry (STI) by showing them that STI is an innovating industry, technologically very active and with stimulating opportunities for research and development. It is also essential to make transport SMEs more attractive and more interesting for young people.

PROJECT RESULTS

The project generated a deeper awareness and knowledge concerning science and research impact on society's welfare, contributing in addition to strengthen the European Research Area and to the implementation of the EU Framework Programme.

The main results of the project were:

- a total of 90 senior students and 9 Surface Transport SMEs were involved in multidisciplinary teams to tackle the R&D needs of those SMEs and give students a direct working experience with the STI;
- more than 300 students participated in the 'Cafés Scientifiques' in Portugal, Spain, Germany, Hungary and Sweden to raise their awareness on the importance of surface transport in our society;
- and a final booklet was published describing the methodology used by the project.







FUNDACION CIDAUT - Spain

TECHNISCHE UNIVERSITAET DRESDEN Germany

BUDAPESTI MUSZAKI ES
GAZDASAGTUDOMANYI EGYETEM -

LUNDS UNIVERSITET - Sweden

Hungary

TRI-VALUE

Ex-Post Evaluation of Transport Research and Innovation in the FP7 Cooperation Programme

INFORMATION

Contract Number

605303

Theme

Transports

Instrument

CSA-SA

Total Cost

643.795 €

EC Contribution

498.211 €

Coordinator EC Contribution

112.725 €

Project Start Date

01-May-13

Scientific Coordinator

Daniela Carvalho (daniela.carvalho@tis.pt)

TIS.PT - CONSULTORES EM TRANSPORTES, INOVAÇÃO E SISTEMAS, S.A. Av. Marquês de Tomar 35, 6° 1050-153 LISBOA

Duration

12 Months

Project Website www.tis.pt/proj/tri-value

ABSTRACT (Project Objectives & Description of Work)

TRI-VALUE looks back into the FP7 work on transport with the aim of performing an ex-post evaluation. The objectives are: (i) to analyse implementation and management; (ii) to assess achievements and impacts of the transport research financed by FP7 (regarding specific objectives, economic, social and environmental impacts); (iii) to evaluate efficiency, effectiveness and relevance of the funding; and (iv) to assess sustainability and utility of the programmes. This information will be used to outline conclusions and recommendations for improving transport research and innovation.

TRI-VALUE built its analytical framework based on the Research Impact Pathway methodology. The assessment is being prepared combining primary data (surveys, project reviews and stakeholder consultations) and secondary data (databases, e.g. CORDA, RESPIR; and from other projects, e.g. 'Impact Assessment to Horizon 2020' or EU TRAIN). This work will allow an analysis of performance across a set of indicators, complemented by a comparison with R&I systems from other economies (e.g., US, Japan,...).

PROJECT RESULTS

TRI-VALUE results will focus on three major areas:

- Assessment of the EU's policy experience in Transport Research and Innovation, measuring its concrete results and assessing its outcomes, both positive and negative;
- Evaluation of results, impacts and EU added value, underpinning how the European investment in transport research and innovation contributed towards the development of transport-related excellent scientific progress in Europe, how it contributed to worldwide leadership of the European transport industry, how it addressed transport related societal challenges, and how it contributed to the major European policies (e.g., the Europe 2020 strategy);
- Comparison with Transport Research and Innovation in other major economies.

UNIVERSITY OF LEEDS - United Kingdom

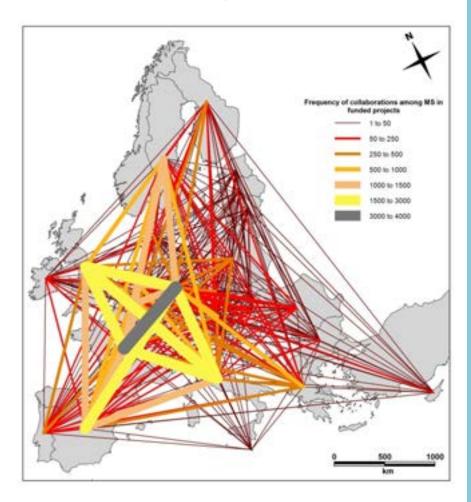
FRAUNHOFER-GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V – Germany

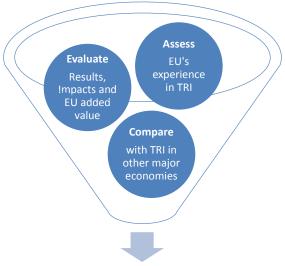
INOVAMAIS - SERVIÇOS DE CONSULTADORIA EM INOVAÇÃO TECNOLÓGICA S.A. – Portugal

UNIVERSIDAD POLITECNICA DE MADRID - Spain

CENTRE FOR RESEARCH AND TECHNOLOGY HELLAS - Greece

TRI-YALUE





Conclusions and Recommendations for improvement of TRI in Europe

TURBLOG_WW

Transferability of Urban Logistics Concepts and Practices from a Worldwide Perspective

INFORMATION

Contract Number

234061

Theme

Transport

Instrument

CSA-CA

Total Cost

1.077.751 €

EC Contribution

873.386 €

Coordinator EC Contribution

138.779 €

Project Start Date

1-Oct-09

Scientific Coordinator

Rosário Macário (rosario@tis.pt)

TIS.PT - CONSULTORES EM TRANSPORTES, INOVAÇÃO E SISTEMAS, S.A. Av. Marquês de Tomar, 35, 6° 1050-153 LISBON

Duration

27 Months

Project Website www.turblog.eu

ABSTRACT (Project Objectives & Description of Work)

The TURBLOG_ww project was designed as a complementary perspective to the work that was promoted on urban logistics at EU level and extended it to worldwide in general and to Brazil and Peru in particular. The main objective was to expand and transfer the existing knowledge on good practices adopted in urban logistics to other countries and thus effectively contribute to disseminate research and knowledge between the European Union and the Latin America countries.

The project acted as a coordination platform, gathering experiences to identify generate and assess best practice solutions on urban freight initiatives. It conducted a set of case studies to identify best practices and assess the lasting effects and impacts of previous projects and tools, and to compare experiences between Europe, Latin America, Asia and Africa.

PROJECT RESULTS

The overall result of TURBLOG_WW and its role in EU research was the dissemination of urban logistics good practices from Europe to other Latin American countries, including urban freight data collection, current and expected transport problems, the institutional framework, the focus of their policies and the main measures used in the selected cities. This was accomplished through the analysis of past urban logistics experiences, allowing the extraction and dissemination of valuable information, supporting on-going and future related initiatives, and contributing to their transferability to the Brazilian and Peruvian contexts and, thus, to other Latin American countries.

The workshops and technical visits contributed to the promotion of exchange of information, awareness and dissemination of concepts and practices adopted worldwide allowing the assessment of the potential transfer of research results at national, European and intercontinental level.









NEA TRANSPORTONDERZOEK EN -OPLEIDING BV - Netherlands

UNIVERSITY OF LEEDS - United Kingdom

INOVAMAIS - SERVIÇOS DE CONSULTADORIA EM INOVAÇÃO TECNOLÓGICA S.A. - Portugal

EMPRESA DE TRANSPORTES E TRÂNSITO DE BELO HORIZONTE S.A. - Brazil

UNIVERSIDAD NACIONAL DE INGENIERIA -Peru

TIS.BR CONSULTORES EM TRANSPORTES INOVAÇÃO E SISTEMAS LTDA. - Brazil



SOCIO-ECONOMIC SCIENCES AND HUMANITIES

GEITONIES

Generating Interethnic Tolerance and Neighbourhood Integration in European Urban Spaces

INFORMATION

Contract Number

216184

Theme

SSH

Instrument

CP-FP

Total Cost

1.855.824 €

EC Contribution

1.462.749 €

Coordinator EC Contribution

311.246 €

Project Start Date

01-May-08

Scientific Coordinator

Lucinda Fonseca (fonseca-maria@campus.ul.pt)

UNIVERSIDADE DE LISBOA

CENTRO DE ESTUDOS

GEOGRÁFICOS

Edif. da Faculdade de Letras

Alameda da Universidade

1600-214 LISBOA

Duration

36 Months

Project Website http://geitonies.fl.ul.pt

ABSTRACT (Project Objectives & Description of Work)

Managing the growing diversity of the European population, as a result of migration, has been called into question, raising fears that the level of social fragmentation is becoming increasingly higher.

Based on a survey applied to natives and migrants in six European cities (Rotterdam, Vienna, Lisbon, Thessaloniki, Bilbao and Warsaw), the GEITO-NIES project analysed how the daily interactions between individuals with different social, cultural and ethnic backgrounds influence the development of a more tolerant society, identifying the more relevant factors in the superficial and in the intimate relationship between natives and migrants.

PROJECT RESULTS

The main conclusions of the project are:

- There is a positive impact of the time factor on the development of inter-ethnic relations;
- The contact between the native population and migrants is very important to fight down prejudice. However, the results show that superficial relations do not seem to be associated with a reduction in negative attitudes towards migrants. Therefore, other, more intimate, forms of contact are needed to significantly reduce discriminatory attitudes;
- The more stable and secure the status of the migrants is, the more frequent the inter-ethnic contacts are;
- The macro-structural features, related to the economic, political and ideological factors or to the specific migratory context of each city, have a more important effect in the relations between natives and migrants than the neighbourhood of residence.







UNIVERSITEIT VAN AMSTERDAM -Netherlands

OESTERREICHISCHE AKADEMIE DER WISSENSCHAFTEN - Austria

UNIVERSIDAD DE DEUSTO - Spain

UNIVERSITY OF MACEDONIA ECONOMICS AND SOCIAL SCIENCES - Greece

UNIWERSYTET WARSZAWSKI - Poland

CENTRO DE ESTUDOS GEOGRÀFICOS DA UNIVERSIDADE DE LISBOA - Portugal

TOLERACE

The Semantics of Tolerance and (Anti-)Racismo in Europe. Public Bodies and Civil Society in Comparative Perspective

INFORMATION

Contract Number

244633

Theme

SSH

Instrument

CP-FP

Total Cost

2.418.314 €

EC Contribution

1.813.734 €

Coordinator EC Contribution

461.499 €

Project Start Date

01-Mar-2010

Scientific Coordinator

Boaventura de Sousa Santos

(bsantos@ces.uc.pt)

UNIVERSIDADE DE COIMBRA
CENTRO DE ESTUDOS SOCIAIS
Colégio S. Jerónimo
Largo D. Dinis, Ap. 3087
3000-995 COIMBRA

Duration

36 Months

Project Website www.ces.uc.pt/projectos/tolerace

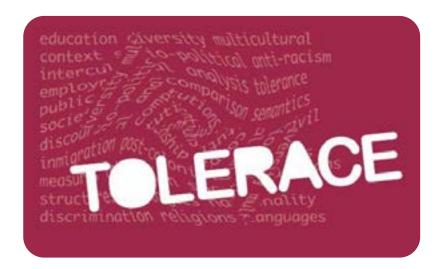
ABSTRACT (Project Objectives & Description of Work)

TOLERACE focuses on the semantics of (anti-)racism to unravel the commonalities of meaning produced within diverse fields of political discourse and policy intervention in Europe (particularly in the spheres of employment and education). Through the analysis of case studies in seven national contexts (Portugal, Spain, Italy, France, Germany, Denmark and United Kingdom), the project has focused on the reproduction of the logics of racism while engaging with their historical contours. Work focuses on the need to critically engage with the conception and functioning of policies and public bodies, and the ways in which anti-racist approaches are marginalised.

PROJECT RESULTS

Research accomplished indicates that common approaches to racism as a matter of prejudiced representations and attitudes are leading to the formulation of insufficient measures. Specifically, they privilege integration as a solution and views of racism merely as individual dispositions towards difference. These are failing to engage with the historical institutionalisation of inequalities across Europe. Broadly, research on education and employment highlighted the following aspects:

- public policies show the construction of minoritised populations as 'problematic' thus rendering the discussion on racism irrelevant;
- anti-racist initiatives are being displaced by a strong culturalist discourse on difference, marginalising questions of discrimination.
- anti-racist movements and struggles are seen as negative and potentially disruptive, thus disregarding their current and historical relevance against the silencing of discrimination.







SOCIAL FORSKNINGS INSTITUTTET - Denmark

EUROPA-UNIVERSITAT VIADRINA FRANKFURT (ODER) - Germany

UNIVERSIDAD DEL PAIS VASCO EHU UPV - Spain

UNIVERSIDAD DE SEVILLA - Spain

UNIVERSITY OF LEEDS - United Kingdom



SPACE

AERSUS

Aerogel European Supplying Unit for Space Applications

INFORMATION

Contract Number

284494

Theme

Space

Instrument

CP-FP

Total Cost

2.565.625 €

EC Contribution

1.952.090 €

Coordinator EC Contribution

269.794 €

Project Start Date

01-Jan-12

Scientific Coordinator

Ricardo Patrício (ricardo.patricio@activespacetech.com)

ACTIVE SPACE TECHNOLOGIES, ACTIVIDADES AEROESPACIAIS S.A. Rua Coronel Júlio Veiga Simão 3025-307 COIMBRA

Duration

36 Months

Project Website www.spi.pt/aersus

ABSTRACT (Project Objectives & Description of Work)

As a result of their unique properties, including low density and low thermal conductivity, aerogels have emerged as the best alternative to currently used thermal control materials for space applications. The AerSUS project aims at manufacturing aerogel to be used as a thermal control system for re-entry capsules, launchers and exploration rovers.

An initial study was conducted, focusing on the space market and existing thermal insulation materials for the aerospace industry. Technical specifications for the aerogels' synthesis and requirements of aerogel for space applications were defined.

These activities were followed by aerogel synthesis and characterisation, as well as space compatibility preliminary assessment, in order to select the most suitable aerogels to be synthesised at semi-industrial scale.

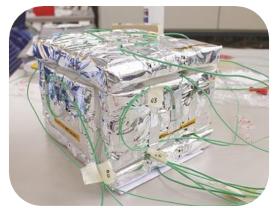
Aerogel insulation system prototypes will be built and their thermal insulation performance validated.

PROJECT RESULTS

The AERSUS project will develop, among others:

- requirement specifications for space applications of different aerogels;
- characterization of the different types of aerogels;
- design of new technologies for semi-industrial production of aerogels;
- and design of a prototype for an insulation system based on aerogels and further validation.









ACTIVE SPACE TECHNOLOGIES GMBH - Germany

THALES ALENIA SPACE ITALIA SPA - Italy

UNIVERSIDADE DE COIMBRA - Portugal

ASSOCIATION POUR LA RECHERCHE ET LE DEVELOPPEMENT DES METHODES ETPROCESSUS INDUSTRIELS - ARMINES - France

SCIENCE AND TECHNOLOGY FACILITIES COUNCIL - United Kingdom

SEPAREX SA - France

DEUTSCHES ZENTRUM FUER LUFT - UND RAUMFAHRT EV - Germany

BRAGMA

Bridging Actions for GMES and Africa

INFORMATION

Contract Number

284422

Theme

Space

Instrument

CSA-SA

Total Cost

1.119.960 €

EC Contribution

998.631 €

Coordinator EC Contribution

341.972 €

Project Start Date

01-Jan-12

Scientific Coordinator

Ana Morgado

(anamorgado@iict.pt)

INST. DE INVESTIGAÇÃO
CIENTÍFICA TROPICAL
Rua da Junqueira 30
1349-007 LISBOA

Duration

24 Months

Project Website www.bragma.eu

ABSTRACT (Project Objectives & Description of Work)

The BRAGMA Project is a coordination action to facilitate the dialogue and implement the GMES and Africa Action Plan (GAAP). Project BRAGMA includes 5 European and 5 African partners.

The initiative "GMES and Africa" is a partnership between European Union and African Union for the development of Earth Observation activities for sustainable development of Africa.

BRAGMA is to continue the implementation of the roadmap of GAAP and thus support GAAP's Expert Teamwork.

BRAGMA will also promote FP7 projects targeting "GMES and Africa" activities and facilitate the participation of African stakeholders in conferences in Africa.

PROJECT RESULTS

BRAGMA organized six international courses and provided several grants for professionals to train on control, diagnosis and epidemiology of the African Pig Plague, for the benefit of a large number of Animal Health instituitions in the EU, Africa, Asia and in the Russian Federation.

The current draft of the GAAP addresses 9 thematic areas as well as 5 cross cutting issues. Following requests from the European Commission (EC) and African Union Commission (AUC), BRAGMA will focus primarily on three of the nine GMES and Africa Thematic Areas, namely:

- Marine and coastal areas (including fisheries, integrated coastal zone management, transport, etc.);
- Water resources management (including integrated basin management, ground water and water scarcity issues);
- Long-term management of natural resources (including forest resources, biodiversity, land resources, land cover change and protected area management).





INSTITUT DE RECHERCHE POUR LE DEVELOPPEMENT - France

MUSEE ROYAL DE L'AFRIQUE CENTRALE - Belgium

PARIS-LODRON-UNIVERSITÄT SALZBURG -Austria

DEPARTMENT OF SCIENCE AND TECHNOLOGY - South Africa

NATIONAL AUTHORITY FOR REMOTE SENSING AND SPACE SCIENCES - Egypt

CENTRE D'ETUDES ET DE RECHERCHES DE TELECOMMUNICATIONS - Tunisia

NATIONAL SPACE RESEARCH AND DEVELOPMENT AGENCY - Nigeria

MINISTRY OF SCIENCE AND TECHNOLOGY - Kenya

IIMC INTERNATIONAL INFORMATION MANAGEMENT CORPORATION LIMITED - Ireland

AAVANZ - INOVAÇÃO UNIPESSOAL LDA -Portugal

INFORMATION

Contract Number

501571

Theme

Space

Instrument

CP-FP

Total Cost

2.838.960 €

EC Contribution

1.999.999 €

Coordinator EC Contribution

501.571 €

Project Start Date

01-Dez-2013

Scientific Coordinator

Antonio Gutierrez

(antonio.gutierrez@deimos.com.pt)

DEIMOS ENGENHARIA S.A. Av. D. João II Lote 1.17.01 10° Edifício Torre Zen 1998-023 LISBOA

Duration

36 Months

Project Website www.e-gem.eu/home.html

ABSTRACT (Project Objectives & Description of Work)

The E-GEM project will develop and test state-of-the-art GNSS Reflectometry (GNSS-R) Earth monitoring methods, paving the way for operational applications in oceanography (altimetry, wave height and surface winds) and biophysics (soil moisture, biomass, and ice fields).

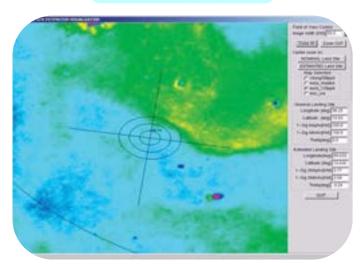
E-GEM will use the world's largest and most comprehensive set of GNSS-R data ever collected. For this purpose, three experimental platforms will be designed specifically for E-GEM: a satellite, a Unmanned Aerial Vehicle (UAV) and a ground instrument. The massive data sets to be acquired are critical features when designing and validating the processing chains and the high-resolution Earth observation products.

E-GEM puts together leading experts in GNSS-R technologies, experienced teams in Earth Observation domains and marine users, to properly address the data needs and requirements of Copernicus (The European Earth Observation Programme) services and other European Earth monitoring initiatives. The project shall also establish how GNSS-R methods can best respond to the identified challenges in these domains. Institutional, public and private stakeholders will from day one have a word in the development and use of the technology, steering the project's efforts and increasing the awareness of this promising technology.

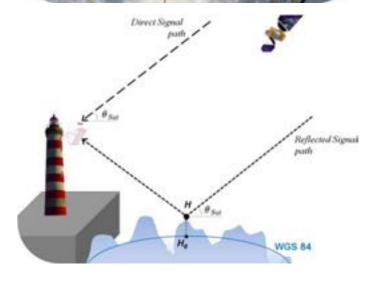
PROJECT RESULTS

E-GEM will contribute to the improvement of GNSS-R technology based products. Both GPS P code (space and airborne acquired signal) and Galileo's most advanced and promising AltBOC signals (Alternative Binary Offset Carrier) will be used as input signals for reflectometry studies over ocean surface. The E-GEM project will build on the achievements of the European GNSS-R community, which play a leading role in the world. It will also bring together the individual efforts from on-going projects into a joint and integrated platform.

E-GEM







UNIVERSITAT POLITECNICA DE CATALUNYA - Spain

AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS - Spain

INSTITUT FRANCAIS DE RECHERCHE POUR L'EXPLOITATION DE LA MER - France

STIFTELSEN NANSEN SENTER FOR MILJOOG FJERNMALING - Norway

UNIVERSITA DEGLI STUDI DI ROMA TORVERGATA - Italy

UNIVERSITA DEGLI STUDI DI ROMA LA SAPIENZA - Italy

UNIVERSIDAD DE SALAMANCA - Spain

NORTHERN RESEARCH INSTITUTE TROMSO AS - Norway

Helmholtz-Zentrum Potsdam Deutsches GeoForschungsZentrum - Denmark

EUCARBON

European Space Qualified Carbon Fibers and Pre-Impregnated Based Materials

INFORMATION

Contract Number

284500

Theme

Space

Instrument

CP-FP

Total Cost

3.197.684 €

EC Contribution

1.997.446 €

Coordinator EC Contribution

855.173 €

Project Start Date

01-Dec-11

Scientific Coordinator

Celeste Pereira

(cpereira@inegi.up.pt)

INEGI - INST. DE ENGENHARIA MECÂNICA E GESTÃO INDUSTRIAL Campus da FEUP Rua Dr. Roberto Frias, 400 4200-465 PORTO

Duration

36 Months

Project Website www.eucarbon-project.eu

ABSTRACT (Project Objectives & Description of Work)

The EUCARBON project aims at overcoming the presently recognized needs of European-made space qualified carbon fibre and pre-impregnated materials, which are critical building blocks for technological innovation in the Space, Aeronautics and Automotive industries in Europe. Presently, aerospace qualified carbon fibre is either produced outside Europe or produced in Europe under foreign license by only one source.

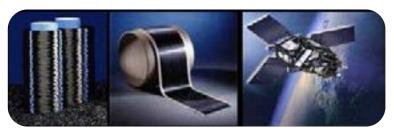
EUCARBON aims at producing high and ultrahigh carbon fibre modulus for satellite applications, and qualify pre-impregnated materials overcoming its low thermal and electrical conductivity and elasticity limitations.

PROJECT RESULTS

The EUCARBON project developments include:

- Setting up a European capacity to manufacture High and Ultrahigh modulus carbon fibres;
- Production of space qualified pre-impregnated carbon fibres and epoxy resins doped with carbon Nanotubes (overcoming carbon low thermal and electrical conductivity);
- Demonstration design and manufacturing of components;
- Testing of demonstrators using satellite and launcher components.







FISIPE -FIBRAS SINTÉTICAS DE PORTUGAL S.A. - Portugal EADS CASA ESPACIO - Spain CTL TASTAIL TEORANTA LIMITED - Ireland

GAMALINK Generic SDR-Based Multifunctional Space Link

INFORMATION

Contract Number

312830

Theme

Space

Instrument

CP-FP

Total Cost

1.914.826 €

EC Contribution

1.484.973 €

Coordinator EC Contribution

378.425 €

Project Start Date

01-Jan-13

Scientific Coordinator

Pedro Rodrigues (pedro.rodrigues@tekever.com)

> **TEKEVER ASDS** Rua das Musas, 3.30 1990-113 LISBOA

> > Duration

24 Months

Project Website http://gamalink.tekever.com

ABSTRACT (Project Objectives & Description of Work)

GAMALINK will combine expertise on satellite navigation, ad hoc networking, attitude determination, antenna design and beam forming into a compact common technological hardware platform, suitable for LEO small satellite missions. The hardware platform will be based on Software-Defined Radio (SDR), an innovative terrestrial concept that enables the development of various waveforms using a common hardware platform. GAMALINK will spin-in terrestrial technologies into space, because terrestrial technologies are far more advanced than those used in space.

PROJECT RESULTS

GAMALINK will implement:

- mobile ad hoc networking;
- attitude determination of one station relative to another;
- GPS waveform reading and signal decoding and ranging between different satellites;
- innovative antenna and RF frontend design;
- beam forming techniques.

GAMALINK breakthroughs shall bring SDR to space and create an integrated solution for communications, attitude and orbit control.

ARMAGAN ERGUN - Turkey

TTI NORTE SL - Spain

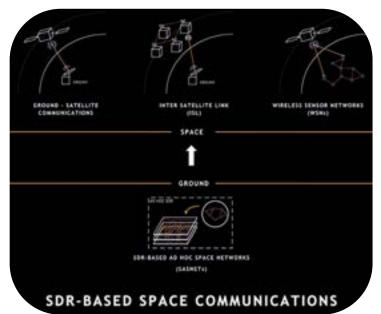
UNIVERSIDADE PORTO - Portugal

FRAUNHOFER - Germany

TURKIYE BILIMSEL VE TEKNOLOJIK

ARASTIRMA KURUMU – Turkey







GANSAT

Gan Powered Ka-Band High-Efficiency Multi-Beam Transceivers for Satellites

INFORMATION

Contract Number 606981

Theme

Space

Instrument

CP-FP

Total Cost

3.479.039 €

EC Contribution

2.497.606 €

Coordinator EC Contribution

177.631 €

Project Start Date

01-Oct-13

Scientific Coordinator

Rodolfo Martins (rodolfo.martins@evoleotech.com)

EVOLEO TECHNOLOGIES, LDA.

Trav Sá e Melo 161,

Fracção H, Gueifães

4470-116 MAIA

Duration

36 Months

Project Website

http://evoleotech.com/gansat

ABSTRACT (Project Objectives & Description of Work)

The GANSAT project will demonstrate that GaN (Gallium Nitride) based SSPA (Solid State Power Amplifier) will be able to provide higher power at Ka band, (microwave band c covers the frequencies of 26.5–40 GHz) than amplifiers based on traditional Silicon or Gallium Arsenide technologies. This will be achieved by exploiting the recent development in GaN technologies, high-efficiency power amplifier design techniques, power combining technologies (solution to overcome limitations on power amplifier technologies) and active array antenna technologies.

It is expected that GANSAT will deliver a power output of several hundred Watts at the Ka band. This will be a significant step beyond the state of the art, and will open the door for GaN-based SSPA for space applications such as satellite communications, DBS (Doppler beam Sharpening) or SAR (Synthetic Aperture Radar). Due to the high power density of GaN devices, the system will have several advantages such as compact size, low mass and low cost. This is extremely useful for low-cost small satellites where the physical size, mass, power consumption and cost are major restrictions. The GaN amplifier will also be useful for large satellites.

PROJECT RESULTS

The project addresses challenges in high-frequency high-power satellite radio transceivers, and targets significant TRL evolution towards:

- Enhanced robustness and functionality of radio transceivers in the Ka band;
- Space qualification of GaN Monolithic Microwave Integrated Circuits;
- High-efficiency high-power multi-beam active antennas;
- High-efficiency high-linearityPower Amplifiers;
- New linearization techniques.

EFACEC ENGENHARIA E SISTEMAS SA – Portugal

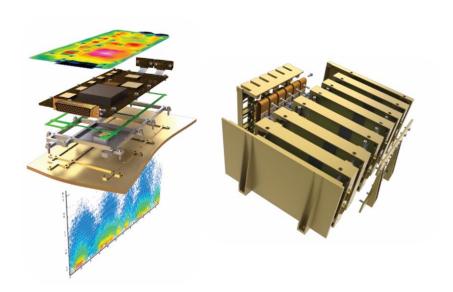
FORSCHUNGSVERBUND BERLIN E.V. – Germany

UNIVERSITY OF KENT - United Kingdom

ASTRIUM SAS – France
MIER COMUNICACIONES SA – Spain

INSTITUTO DE TELECOMUNICAÇÕES - Portugal

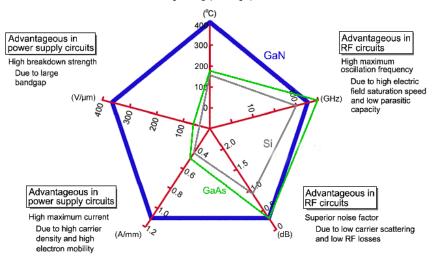




Advantageous in power supply circuits

High operating temperature

Due to large bandgap and high potential barrier



MYWATER

Merging Hydrologic Models and EO Data for Reliable Information on Water

INFORMATION

Contract Number

263188

Theme

Space

Instrument

CP

Total Cost

2.915.842 €

EC Contribution

2.273.832 €

Coordinator EC Contribution

326.771 €

Project Start Date

01-Jan-11

Scientific Coordinator

António Safara Araújo (antonio.araujo@gmv.com)

GMVIS SKYSOFT, S.A.

Av. D. João II Lote 1.17.02

Torre Fernão Magalhães, 7°

1998-025 LISBOA

Duration

36 Months

Project Website www.mywater-fp7.eu

ABSTRACT (Project Objectives & Description of Work)

MYWATER will develop a Water Information System for decision making. The system will be able to provide reliable information on water quantity, quality and usage, with forecasting and simulation capabilities, and at the same time optimizing the cost/benefit ratio of monitoring water resources.

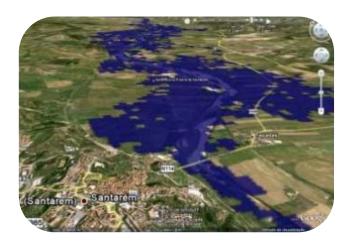
This objective is to be reached by conducting coordinated research in three areas: earth observation (EO), catchment modelling and meteorology. Data from these different sources will be integrated through a unique interface platform, which provides user-tailored results on agriculture water needs, water for consumption, floods and desertification.

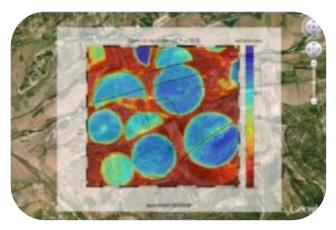
PROJECT RESULTS

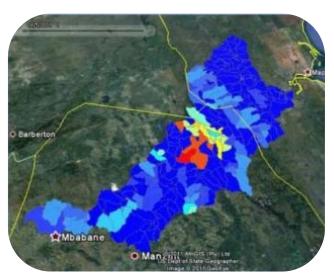
Examples of the main services delivered by the project are:

- Flood Alert System: daily flood alert with flood area mapping using risk indexes and digital terrain models can be computed daily; Forecast and simulation capabilities can be used for preparedness and for planning mitigation actions;
- Irrigation Support Systems: targeting support to agriculture, maps on agriculture water needs providing information to users about when to irrigate and for how long (this can be provided with alarm generation triggering sms to users); Forecasts for weekly evapotranspiration are derived using a time sequence of GMES images;
- Desertification: for desertification stress analysis, the following parameters are mapped: amount of organic matter in the soil, vegetation, climate, erosion and ground water concentration;
- Reservoir Management System: measurements of flow data (nowcasts and forecasts) provide evaluation on water input to the reservoir.









INSTITUTO SUPERIOR TÉCNICO - Portugal HIDROMOD MODELAÇÃO EM ENGENHARIA LDA - Portugal

UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANIZATION -UNESCO - France

HYDROLOGIC RESEARCH BV - Netherlands

JRC -JOINT RESEARCH CENTRE-EUROPEAN COMMISSION - European Union

INSTITUTO NACIONAL DE PESQUISAS ESPACIAIS - Brazil

PANNON EGYETEM - Hungary

ARISTOTELIO PANEPISTIMIO THESSALONIKIS - Greece

UNIVERSIDADE EDUARDO MONDLANE - Mozambique

SenSyF

Sentinels Synergy Framework

INFORMATION

Contract Number

313117

Theme

Space

Instrument

CP-FP

Total Cost

2.545.422 €

EC Contribution

1.992.967 €

Coordinator EC Contribution

650.446 €

Project Start Date

01-Nov-12

Contact

Antonio Gutierrez

(antonio.gutierrez@deimos.com.pt)

DEIMOS ENGENHARIA S.A.

Av. D. João II, Lote 1.17.01 10°

Edifício Torre Zen

1998-023 LISBOA

Duration

36 Months

Project Website www.sensyf.eu/project.html

ABSTRACT (Project Objectives & Description of Work)

The objective of the SENSYF Project is to develop a fully automatic system that allows the implementation of satellite data processing chains for Sentinel and other european satellite missions.

SENSYF will develop a framework combining big satellite data flow and processing chains in an integrated pre-production environment. Sentinel satellites will force European suppliers and stakeholders into a new paradigm of big data handling and near real-time processing. Sentinel satellites will increase the data flow to Tbyte per day. A free-open policy will facilitate access to data and bandtwidth available to transmit is intrinsically limited. SENSYF will research solutions to overcome these limitations and market pushing by developing new strategies based on processing chain framework which will support continuous delivery of highlevel and complementary services. The system will be based on dynamic processing chains based on grids. SENSYF includes infrastructure and interface tools.

PROJECT RESULTS

SENSYF intends to develop 6 demonstration services as testbed for a processing chain framework, focusing on landuse themes:

- Monitoring water reservoirs;
- Vegetation mapping on Arctic-Alpine regions;
- Soil and Ice monitoring;
- Integration of reflectance data from many sensors;
- Change detection of forest canopy and land use;
- Crop irrigation and landscape management.











DEIMOS SPACE SOCIEDAD LIMITADA UNIPERSONAL - Spain

TERRADUE SRL - Italy

CENTRO NACIONAL DE INFORMACION GEOGRAFICA - Spain

ACRI-ST SAS - France

NORTHERN RESEARCH INSTITUTE TROMSO AS - Norway

ARGANS LIMITED – United Kingdom
INSTITUTO SUPERIOR TECNICO - Portugal
UNIVERSITAT DE VALENCIA - Spain

Space Wireless Sensor Networks for Planetary Exploration

INFORMATION

Contract Number

312826

Theme

Space

Instrument

CP-FP

Total Cost

2.056.245 €

EC Contribution

1.495.852 €

Coordinator EC Contribution

433.662 €

Project Start Date

01-Apr-13

Scientific Coordinator

André Oliveira (andre.oliveira@tekever.com)

> TEKEVER ASDS Rua das Musas, 3.30 1990-113 LISBOA

> > Duration

31 Months

Project Website http://swipe.tekever.com

ABSTRACT (Project Objectives & Description of Work)

SWIPE intends to bring Wireless Sensor Networks based on MANET (Mobile Ad Hoc Networking) terrestrial technology to space, in order to prepare for manned missions to other planets. SWIPE will allow permanent monitoring of planetary surface environment and conditions. Hundreds or thousands of small wireless sensors could be dropped from orbiting satellites and establish an ad hoc Wireless Sensor Network (WSN) and a satellite link. This will assure a uniform and sufficient coverage, gather data continuously, send the information to the orbiting satellite and later to Earth. SWIPE will define this mission scenario in detail as well as system requirements, and will also perform system level design of the three different communication segments involved: within the sensor network, between the sensor network and the relay satellite and between the satellite and Earth. The philosophy of SWIPE relies on terrestrial technology. The communications concept is based on a terrestrial networking technology, not yet validated in space. The hardware communications platform is based on Software-Defined Radio, a promising terrestrial technology.

PROJECT RESULTS

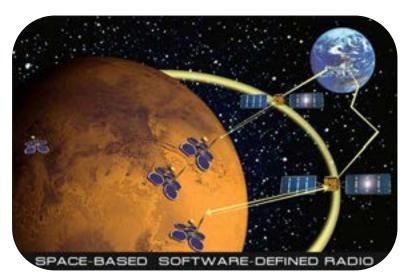
SWIPE intends to accomplish the following results, testing applicability of Ad hoc networking for a planetary exploration scenario:

- To design the hybrid Satellite-WSN architecture for the planetary exploration;
- To design and develop energy-efficient WSN and ad-hoc routing algorithms applied to this hybrid network;
- To design and develop multi-sensor data processing and data fusion techniques;
- To develop the sensor node, using a Software Defined Radio (SDR) approach.

The whole system will be evaluated in laboratory and in a field test on planetary surface analogue (e.g. Svalbard in Norway), chosen according to mission scenario and according to major space players specifications. It shall process data gathered by plantetary sensors and later send it to the orbiting satellite and to Earth.







ARQUIMEA INGENIERIA S.L - Spain ASTRIUM S.A.S. - France UNIVERSITY OF LEICESTER - United Kingdom

CONSORZIO PER LA RICERCA NELL' AUTOMATICA E NELLE TELECOMUNICAZIONI C.R.A.T. - Italy



SECURITY

iSAR+

Online and Mobile Communicationsfor Crisis Response and Search and Rescue

INFORMATION

Contract Number

312850

Theme

Security

Instrument

CР

Total Cost

5.225.062€

EC Contribution

3.987.992 €

Coordinator EC Contribution

538.100 €

Project Start Date

01-Jan-13

Scientific Coordinator

João Belfo

(joao.belfo@tekever.com)

TEKEVER - TECNOLOGIAS DE INFORMAÇÃO, S.A. Rua das Musas, 3.30 1990-113 LISBOA

Duration **30 Months**

Project Website http://isar.i112.eu

ABSTRACT (Project Objectives & Description of Work)

The iSAR+ Project aims to research and develop guidelines and an associated platform that, in emergencies or crises, enables citizens using new mobile and online technologies to actively participate in the response effort through the bi-directional provision, dissemination, sharing and retrieval of information essential for critical Public Protection & Disaster Relief (PPDR) intervention, in search and rescue, law enforcement and medical assistance.

Empowered by new communication media, such as mobile phones with cameras and internet-based applications connecting to social media platforms, citizens are the *in situ* first sensors, but their added-value involvement in crisis response efforts is often disregarded by PPDRs, as they struggle to timely develop an adequate situational awareness. The iSAR+ project innovates the approach to the dynamics between citizens and PPDRs during crises, allowing: (i) an increase to PPDR levels of shared awareness and performance, based on information published by citizens; (ii) the exploitation of mobile platforms ubiquity to search, locate and effectively communicate with citizens; and (iii) the redirectioning of the high energy and information flow from citizens into PPDRs platforms.

PROJECT RESULTS

The iSAR+ project shall produce three major results:

- A set of guidelines that incorporate findings and recommendations from the organisational (e.g., governance, structure, processes and roles), the human (e.g., human behaviour and cognitive performance during crises), the ethical and legal (e.g., consideration of EU privacy rights concerns and legal framework, often disregarded by popular social media) as well as the technological (e.g., ICT for crisis) dimensions;
- A technological platform that integrates the best technology available in order to deliver a set of services that, by design, are compliant with the iSAR+ guidelines;
- A roadmap to assist PPDRs and citizens on the adoption process of the guidelines established in this Project.

BRIDGE 129 SPA SAFETY AND SECURITY - Italy

CENTRE FOR SCIENCE, SOCIETY AND CITIZENSHIP - Italy

DEVERYWARE - France

PELASTUSOPISTO, EMERGENCY SERVICES COLLEGE - Finland

ERNST-MORITZ-ARNDT-UNIVERSITÄT GREIFSWALD - Germany

ITTI SP.ZO.O. - Poland

HELSE BERGEN HF*HAUKELAND UNIVERSITY HOSPITAL - Norway

POHJOIS-SAVON PELASTUSLAITOS - Finland

NORTH YORKSHIRE POLICE AUTHORITY - United Kingdom

VILLOT EMMANUELLE - France

POLIISIAMMATTIKORKEAKOULU - Finland

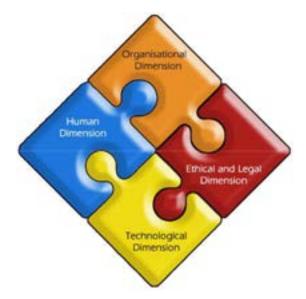
TRINITY COLLEGE DUBLIN - Ireland

THALES COMMUNICATIONS & SECURITY SA - France

ITÄ-SUOMEN YLIOPISTO - Finland

ZANASI ALESSANDRO SRL – Italy









SALUS

Security And Interoperability in Next Generation PPDR Communication Infrastructures

INFORMATION

Contract Number 313296

Theme **Security**

Instrument **CP**

Total Cost **4.768.125 €**

EC Contribution 3.499.829 €

Coordinator EC Contribution 300.803 €

Project Start Date 01-Sep-13

Scientific Coordinator
Hugo Marques
(hugo.marques@av.it.pt)

INST. DE TELECOMUNICAÇÕES Campus Univ. de Santiago

3810-193 AVEIRO

Duration **36 Months**

Project Website www.sec-salus.eu

ABSTRACT (Project Objectives & Description of Work)

Public Protection and Disaster Relief (PPDR) agencies in EC member states rely on digital Private Mobile Radio (PMR) networks for mission-critical voice and data communication. These PMR networks are highly resilient and properly dimensioned to cope with crisis and emergency handling, and are well protected against monitoring and intrusion by means of encryption, authentication and integrity. The majority of these networks are based on mature technology, requiring old-fashion synchronous links (backbone), and using proprietary hardware solutions that eventually become obsolete. These networks also provide limited technology coverage, resulting in lack of interoperability with legacy communication networks resulting in ineffective management of emergency events, specifically in terms of cross-border operations, and posing obstacles to support future emergency applications and services.

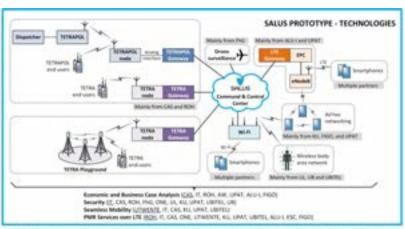
The main goal of the SALUS project is to design, implement and evaluate a next generation communication network concept for PPDR agencies, supported by network operators and industry, which will provide security, privacy, seamless mobility, quality of service and reliability support for mission-critical PMR voice and broadband data services. The SALUS project will provide a robust, reliable, and secure mobile broadband communications system solutions for a wide variety of PMR applications and services on PPDR broadband networks, including the ability of intersystem, inter-agency and cross-border operations with emphasis on interoperability between users in PMR and LTE.

PROJECT RESULTS

SALUS targets key research challenges that include enterprise architectures, economic and business analysis, and a number of technical aspects, such as quality of service, resilience, inter-systems handover (secure, seamless and fast), enhanced security, privacy mechanisms in heterogeneous network infrastructure, and multicast broadband PPDR services; and specific items ranging from spectrum availability to body area networks for in-field staff operations support.







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CASSIDIAN SAS - France

ROHILL TECHNOLOGIES BV - Netherlands

AIRWAVE SOLUTIONS LTD - United Kingdom

FRAUNHOFER-GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V – Germany

ONE SOURCE CONSULTORIA INFORMÁTICA LDA – Portugal

UNIVERZA V LJUBLJANI - Slovenia

UNIVERSITEIT TWENTE - Netherlands

KINGSTON UNIVERSITY HIGHER EDUCATION CORPORATION - United Kingdom

UNIVERSITY OF PATRAS - Greece

UBITEL CO LTD - Russia

ELEKTROTEHNICKI FAKULTET UNIVERZITET U BEOGRADU – Serbia

PUBLIC SAFETY COMMUNICATION EUROPE FORUM AISBL – Belgium

ALCATEL-LUCENT INTERNATIONAL SAS – France

PELASTUSOPISTO, EMERGENCY SERVICES COLLEGE – Finland

FIGO BV - Netherlands

SECURECHAINS

Integration of Security Technology Supply Chains and Identification of Weaknesses and Untapped Potential

INFORMATION

Contract Number

242417

Theme

Security

Instrument

CSA-SA

Total Cost

1.082.007 €

EC Contribution

820.032 €

Coordinator EC Contribution

120.832 €

Project Start Date

01-May-10

Scientific Coordinator

Miguel Sousa

(miguel.sousa@inovamais.pt)

INOVAMAIS - SERVIÇOS DE

CONSULTADORIA EM

INOVAÇÃO TECNOLÓGICA S.A.

Centro de Inovação de Matosinhos

Rua Dr. Afonso Cordeiro 567

4450-309 MATOSINHOS

Duration

24 Months

Project Website www.securechains.eu

ABSTRACT (Project Objectives & Description of Work)

The SecureCHAINS project aimed at actively involving researchers, government institutions, SMEs and large industry to look at technologies capable of tackling a number of major topics in the field of security in Europe, such as: Security of citizens; Security of infrastructures and utilities; intelligent surveillance and border security; Restoring security and safety in case of crisis. The SecureCHAINS project sought to identify and inform appropriate organisations (in particular SMEs) not yet involved or settled in the security (research) domain, to help them understand security related targets, mechanisms and opportunities.

The main but also the most challenging objective of the project was to facilitate the access of SMEs to the main stakeholders and integrators of the Security Technology Supply Chains (STSC). To achieve this, SecureCHAINS offered the following services, among others: (i) promotion of SMEs engagement in the STSC; (ii) creation of a free database of key actors and stakeholders; (iii) organisation of information exchange fora; (iv) creation of a free Online Course "Get Ready for Security FP7".

PROJECT RESULTS

The main project results of the project were the following: (i) Raise awareness among 2500 SMEs, large companies, RTOs and other STSC stakeholders about EU RTD funding; (ii) Develop a technology screening activity at EU level to identify weak spots in the security supply chains; (iii) Develop nine technology trees to list the main actors in important Supply Chain Technologies; (iv) Identify problems that inhibit the participation of SMEs in European RTD activities; (v) Organise 3 communication exchange at European Security related events (Germany, United Kingdom and Poland) to foster discussions and communication on security research progress between all STSC key stakeholders and to promote RTD project generation and dialogue between experienced proposers and newcomers; (vi) Screen the best 20 new RTD proposal ideas from the on-site visits, RTDs results, and synergies with other running FP7 initiatives.







FRAUNHOFER-GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V - Germany

DEUTSCHE POST WORLD NET MARKET RESEARCH AND INNOVATION GMBH -Germany

INNOVA SPA - Italy

SOLLERTA Ltd - United Kingdom

FUNDACION TECNALIA RESEARCH & INNOVATION - Spain

MR. JUERGEN K. VON DER LIPPE AND DR. JEAN CORNIER - Germany

UNIVERSITATEA DIN CRAIOVA - Romania

ALMA CONSULTING GROUP SAS - France

TECHNICAL SUPPORT FOR EUROPEAN ORGANISATIONS SPRL - Belgium

SOUTHEASTERN EUROPE TELECOMMUNICATIONS & INFORMATICS RESEARCH INSTITUTE - Greece

SNIFFER

Sensory Devices Network for Food Supply Chain Security

INFORMATION

Contract Number

312411

Theme

Security

Instrument

CP

Total Cost

3.632.513€

EC Contribution

2.720.029€

Coordinator EC Contribution

506.750€

Project Start Date

01-May-13

Scientific Coordinator

David Coimbra

(david.coimbra@tekever.com)

TEKEVER ASDS Rua das Musas, 3.30 1990-113LISBOA

Duration

36 Months

Project Website www.sniffer-project.eu

ABSTRACT (Project Objectives & Description of Work)

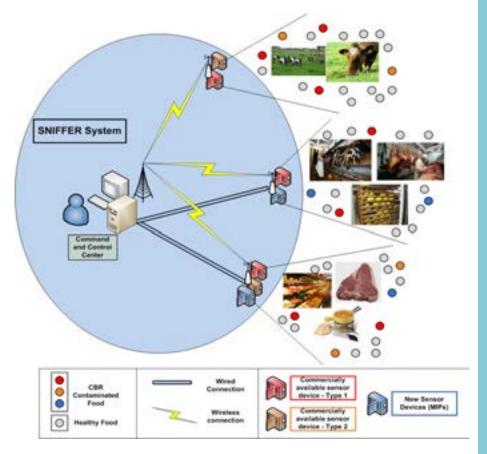
Project SNIFFER envisions the design and development of a network of distributed detection devices, capable of rapid, on-site detection of multiple kinds of Chemical, Biological and Radiological (CBR) agents with high sensitivity and specificity throughout the most vulnerable stages of the food supply chain (such as farms, large collection centers, wholesalers, etc...). The project will address both available sensor technology and new, complementary sensor devices that shall be used for the detection of hazardous CBR agents within the food supply chain. The sensor devices to be developed are characterised by their portability, easiness to use and reusability. Another important feature of the new device will be its modular design, i.e., the device is formed by several independent modules (sensors, communication device, on-board computing, etc), combined through generalised and standardised connections. The network of sensor devices will be designed as a centralised architecture, in which all the data from the devices will be sent to a command center. An operator of the SNIFFER system will also have the ability to remotely control and command the sensor devices using a specific interface from the command center.

PROJECT RESULTS

The SNIFFER project shall make the food supply chain more secure by applying both commercially available sensor devices and novel technology, namely the Molecular Imprinted Polymers (MIPs) based sensor technology, in a networked environment. The envisioned network is expected to be able to cover the entire food supply chain in which various detection devices will be placed at the most vulnerable points, such as cow grazing fields, milk farms, cheese factories, transport hubs, etc...

The SNIFFER project will also include data fusion capabilities to improve the quality of detection.





MINISTÉRIO DA DEFESA NACIONAL -Portugal

UMEA UNIVERSITET - Sweden

INESC PORTO - INSTITUTO DE ENGENHARIA DE SISTEMAS E COMPUTADORES DO PORTO - Portugal

UNIVERSIDAD DE BURGOS - Spain

OSTERREICHISCHE AGENTUR FUR GESUNDHEIT UND ERNAHRUNGSSICHERHEIT GMBH - Austria

CSEM CENTRE SUISSE D'ELECTRONIQUE ET DE MICROTECHNIQUE SA - RECHERCHE ET DEVELOPPEMENT - Switzerland

FORSVARETS FORSKNINGINSTITUTT - Norway

SOTERIA

Online and Mobile Communications for Emergencies

INFORMATION

Contract Number 606796

Theme **Security**

Instrument **CP-FP**

Total Cost 5.128.589 €

EC Contribution 3.971.177 €

Coordinator EC Contribution 623.527 €

Project Start Date 01-Sep-14

Scientific Coordinator
Pedro Sinogas
(pedro.sinogas@tekever.pt)

TEKEVER - TECNOLOGIAS DE INFORMAÇÃO, S.A. Rua das Musas, 3.30 1990-113 LISBOA

Duration **30 Months**

Project Website http://soteria.i112.eu

ABSTRACT (Project Objectives & Description of Work)

SOTERIA aims at developing recommendations and a toolbox to leverage the positive impact that social media can play in emergencies, enabling public safety organisations (PSOs) and citizens to communicate before, during and after an emergency event. Empowered by new mobile phones with cameras, text messaging and internet-based applications connecting to social media, citizens expect PSOs to use the same technologies. SOTERIA shall innovate by allowing the (i) understanding of the impact that social media entails in emergency management systems; (ii) use of all communication channels in emergency situations, including social media, (iii) exploitation of the ubiquity of mobile platforms to locate and effectively communicate with citizens in distress; and (iv) leverage the levels of shared awareness and performance of PSOs, benefiting from social media information.

PROJECT RESULTS

The main results from SOTERIA are threefold:

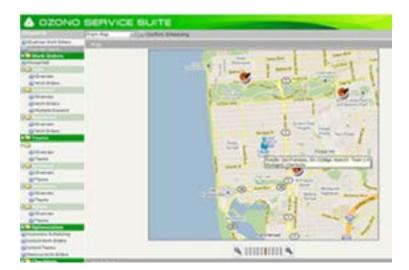
A set of recommendations for the use of social media technologies and tools in emergencies;

A professional SOTERIA toolbox for emergency response;

A set of tools based on social media for use by citizens.

The professional and citizen toolboxes will be designed taking into account the organisational culture of emergency services and the European Union's legislation and concerns on privacy, as well as the related human and technological dimensions. These will enable PSOs to understand the benefits of social media in emergencies and to gradually adopt these technologies in their daily activities, assisting in the safeguard of citizens in emergency and crisis situations.







AMBULANCE AND EMERGENCY PHYSICIANS ASSOCIATION - Turkey

BRIDGE 129 SPA SAFETY AND SECURITY - Italy

CENTRE FOR SCIENCE, SOCIETY AND CITIZENSHIP - Italy

DEVERYWARE - France

ERNST-MORITZ-ARNDT-UNIVERSITÄT GREIFSWALD - Germany

PELASTUSOPISTO, EMERGENCY SERVICES COLLEGE - Finland

HELSE BERGEN HF*HAUKELAND UNIVERSITY HOSPITAL - Norway

ITTI SP. Z O.O. - Poland

NORTH YORKSHIRE POLICE AUTHORITY - United Kingdom

POLIISIAMMATTIKORKEAKOULU - Finland

POLE PILOTE DE SECURITE LOCALE - PPSL - France

KUOPION KAUPUNKI - Finland

TRINITY COLLEGE DUBLIN - Ireland

THALES SA - France

ITÄ-SUOMEN YLIOPISTO - Finland

ZANASI ALESSANDRO SRL - Italy



ERC

3P's

Plastic-Antibodies, Plasmonics and Photovoltaic-Cells: On-Site Screening of Cancer Biomarkers Made Possible

INFORMATION

Contract Number

311086

Theme

ERC

Instrument

ERC-SG

Total Cost

998.584 €

EC Contribution

998.584 €

Coordinator EC Contribution

998.584 €

Project Start Date

01-Feb-13

Scientific Coordinator

Maria Goreti Sales (mgf@isep.ipp.pt)

INSTITUTO SUPERIOR DE ENGENHARIA DO PORTO

R. Dr. Ant. Bernardino de Almeida, 431

4200-072 PORTO

Duration

60 Months

Project Website

http://cordis.europa.eu/project s/rcn/106352_en.html

ABSTRACT (Project Objectives & Description of Work)

Cancer diseases remain a major public health concern, and early screening is among the most important tools in the fight against these. Monitoring biomolecules that may indicate the presence/progression of the disease could be an effective early screening approach.

The project 3P's presents a new concept for detection, diagnosis and monitoring cancer in point-of-care. The device under development will make use of the selectivity of the Plastic antibodies as sensing materials and the operation of a Photovoltaic cell acting as energy source, equipped with Plasmonic structures to enhance light absorption and cell efficiency. The device under development is expected to be easily operated and applied to the most frequent forms of cancer, namely breast, cervical and colorectal cancer.

PROJECT RESULTS

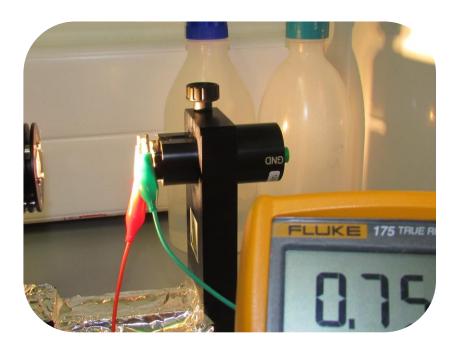
This project aims to develop a new electrical device that is sensitive to cancer biomarkers and allows an electrical-free operation. For this purpose, new synthetic surfaces must be designed to act like antibodies (known as Plastic antibodies, the 1st 'P' of the acronym) for specific cancer biomarkers that circulate in body fluids (serum, urine or saliva). These surfaces are then to be included in a photovoltaic cell (a 2nd 'P') and the final electrical output of the cell measured. When a cancer biomarker binds to this surface, the electrical signal of the cell is changed, and this change used to quantify the cancer biomarker.

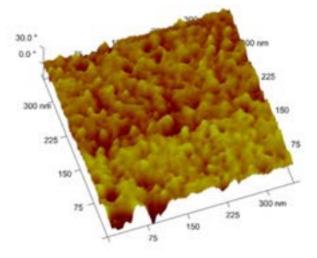
A successful 2P's device, for quantifying carcinoembryonic antigen (CEA) in biological samples, was already developed. It was sensitive to biomarker levels of clinical relevance when tested in real biological fluids of healthy individuals, spiked with CEA. Studies under the current project include the development of similar devices for other current biomarkers, such as CA 15-3 and Carnitine (among others).

Full electrical independence of the 2P's device is also to be demonstrated. This is being done by coupling Plasmonic nanostructures (3rd 'P') to the photovoltaic cell, among many other technical alterations to be introduced at the cell assembly.

This project involves a single participant







AFM image of plastic antibody

5HT-OPTOGENETICS

Optogenetic Analysis of Serotonin Function in the Mammalian Brain

INFORMATION

Contract Number

250334

Theme

ERC

Instrument

ERC-AG

Total Cost

2.318.636 €

EC Contribution

2.318.636 €

Coordinator EC Contribution

1.401.514 €

Project Start Date

01-Jul-10

Scientific Coordinator

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Duration

60 Months

Project Website http://cordis.europa.eu/projects/r cn/94452_en.html

ABSTRACT (Project Objectives & Description of Work)

The serotonin (5-HT) system is one of the most important targets of psychoactive drugs, being particularly important in the treatment of depression, anxiety, panic disorder, chronic pain and other psychiatric conditions. The aim of the project is to elucidate the behavioral function of the 5-HT system. 5HT-OPTOGENETICS proposes to employ optical-genetic (optogenetic) techniques to obtain specific and temporally precise manipulation of 5-HT neuronal cells activity in rodents during behavior. Optogenetic molecules will be delivered to 5-HT neurons using genetically engineered adeno-associated viruses (AAV) and the serotonin-specific promoter Sert. To establish a strong causal link between 5-HT and its functions, optogenetic molecules will be used to monitor (GCaMP), activate (Channelrhodopsin2) and silence (Halorhodopsin) 5-HT release during behavioral assays.

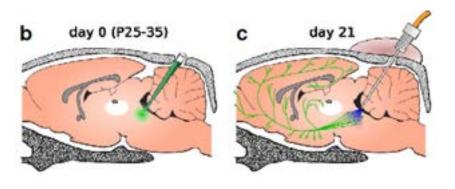
PROJECT RESULTS

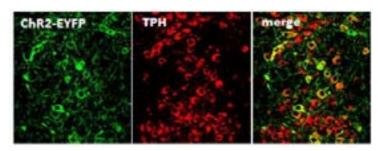
Using a Cre-dependent expression AAV system in transgenic mice, Channelrhodopsin2 (ChR2) was successfully delivered into the 5-HT neurons in the dorsal raphe nucleus (DRN) of the brainstem. After stimulation with light (delivered through an implanted fiber), the neuronal activity of the 5-HT neurons was recorded both in vitro and in vivo. A new efficent methodology was developed to calibrate expression levels of ChR2 and placement of fiberoptic delivery and to demonstrate that 5-HT neurons can be rapidly and reliably activated using optogenetics. Using the same Cre-dependent expression viral system, a fluorescent protein sensitive to neuronal activity (GCaMP) was also specifically delivered in 5-HT neurons to monitor in real-time their activity during different behavioral assays.

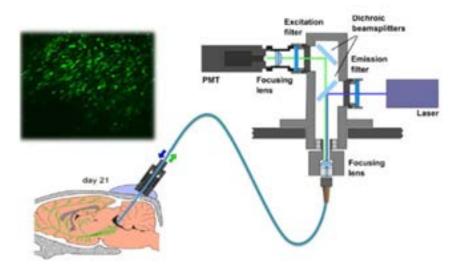
Specific expression of ChR2 in 5-HT neurons of the DRN allowed the manipulation of the serotonin system with high temporal specificity in a variaty of behavioral contexts aimed at testing motor activity, impulsive action and sensory imformation processing.

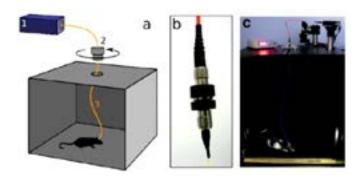
The behavioral experiments performed for this project have mainly centered on the hyptheses: (i) that activation of the 5-HT system modulates sensory and motor processes, and (ii) that 5-HT acts as the negative functional counterpart of the dopamine system.

FUNDAÇÃO CALOUSTE GULBENKIAN -Portugal









ACCELERATES

Acceleration in Extreme Shocks: from the Microphysics to Laboratory and Astrophysics Scenarios

INFORMATION

Contract Number

267841

Theme

ERC

Instrument

ERC-AG

Total Cost

1.588.800 €

EC Contribution

1.588.800 €

Coordinator EC Contribution

1.588.800 €

Project Start Date

01-Jun-11

Scientific Coordinator

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Duration

60 Months

Project Website http://epp.tecnico.ulisboa.pt/

ABSTRACT (Project Objectives & Description of Work)

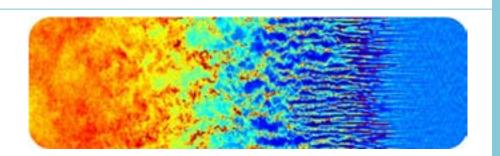
Cosmic rays are the most energetic particles in the Universe. Their origin, and their cosmic accelerators are open long standing questions, closely tied to extreme plasma physics processes, and where a close interplay between the nonlinear processes at the micro scale and the global dynamics is critical.

This project aims to unveil the physics of the cosmic ray accelerators, thought to be relativistic shocks, by performing large scale numerical simulations, supported by theoretical studies, and by identifying the laboratory scenarios where collisionless shock waves can be generated by using the most intense lasers and relativistic particle beams.

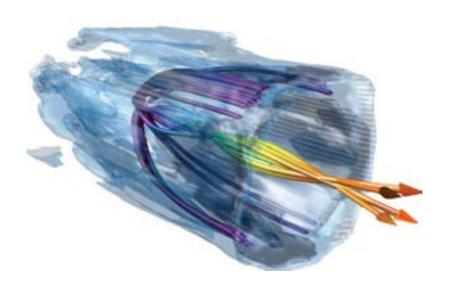
PROJECT RESULTS

ACCELERATES is opening new avenues between theoretical and massive computational studies, laboratory experiments and astrophysical observations. It has already demonstrated unprecedented parallel scalability of the numerical tool used in the project resorting to the largest supercomputer in the World. A novel mechanism to generate collsionless shocks in the laboratory with intense lasers has been identified and this mechanism can be used, not only to understand the fundamental physics of cosmic rays acceleration, but also to accelerate protons to energies relevant for proton cancer therapy. This mechanism has been confirmed in experiments performed in collaboration with UCLA. The parameter map for the excitation of collisionless shocks in the laboratory has also been determined and illustrated with large scale simulations. It is expected very soon to determine the relevant conditions for the excitation of shock waves with laboratory relativistic electron beams, also to be explored experimentally, and to determine the signatures, in terms of radiated light and accelerated particles, that will allow for a comparison with astro observations, thus closing the conceptual loop between in silico science, laboratory experiments, and astronomical observations, and resolving the longstanding central problem of shock formation and particle acceleration in collisionless shock waves.

This project involves a single participant (Instituto Superior Técnico)







ALICE

Strange Mirrors, Unsuspected Lessons: Leading Europe to a New Way of Sharing the World Experiences

INFORMATION

Contract Number

269807

Theme

ERC

Instrument

ERC-AG

Total Cost

2.423.140 €

EC Contribution

2.423.140 €

Coordinator EC Contribution

2.423.140 €

Project Start Date

01-Jul-11

Scientific Coordinator

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Duration

60 Months

Project Website http://alice.ces.uc.pt/en

ABSTRACT (Project Objectives & Description of Work)

Alice seeks to re-think and renovate socio-scientific knowledge by drawing upon "Epistemologies of the South". The objective is to develop new theoretical and political paradigms of social transformation. Throughout Europe and the Global North as a whole, there is a sentiment of intellectual and political exhaustion.

Over a decade into the 21st Century, such exhaustion translates into the incapacity to innovatively confront various challenges that interpellate the world and impeded upon justice: social, environmental, inter-generational, cultural, historical and cognitive justice. In contrast, the Global South, in its immense diversity, presents itself today as a wide field of economic, social, cultural, and political innovation.

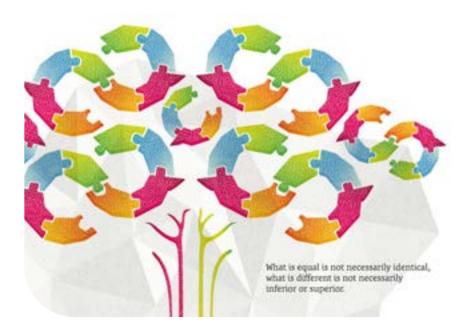
ALICE is grounded on a wager, i.e, that social, political and institutional change may largely benefit from the innovations occurring in countries and regions of the Global South. A demanding wager, to be sure, for it presupposes availability for mutual recognition, intercultural understanding, political and ideological convergence, respect for identity, and celebration of diversity.

PROJECT RESULTS

ALICE rests on the idea that there is a need for an alternative way of thinking about alternatives. On the basis of these premises, it will be possible to engage in a deeper and more empowering form of reflection on the emancipatory experiences of the global South and North, led by social and intellectual-activist movements. The epistemological approach and main conceptual framework of the project demands the implementation of new methodologies. Following this, the decision was made to further the methodology known as the Popular University of Social Movements (UPMS), and to implement it in all countries included in the research project.

These general objectives are pursued by focusing on four main thematic areas: democratizing democracy, transformative constitutionalism, interculturality and State reform, other economies, human rights and other grammars of human dignity. 21 research projects are defined within ALICE. They concentrate on Portugal, France, United Kingdom, Italy, Bolivia, Ecuador, South Africa, India, Brazil, with the addition, for comparative relevance, of Spain and Mozambique. The main objectives of these research projects are to mobilize and test the core concept of ALICE framework in different contexts.







INFORMATION

Contract Number

321315

Theme

ERC

Instrument

ERC-AG

Total Cost

1.989.300 €

EC Contribution

1.989.300 €

Coordinator EC Contribution

1.989.300 €

Project Start Date

01-Mar-13

Scientific Coordinator

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UNIVERSIDADE DO PORTO FACULDADE DE ENGENHARIA DEP. ENGENHARIA QUÍMICA" Rua Dr. Roberto Frias 4200-465 PORTO

Duration

60 Months

Project Website http://cordis.europa.eu/projects/r cn/107008_en.html

ABSTRACT (Project Objectives & Description of Work)

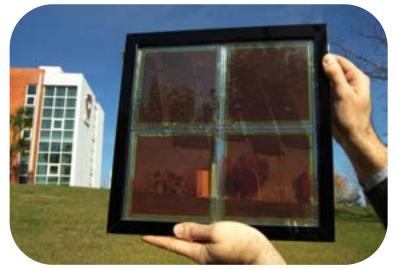
In the last decade, solar and photovoltaic (PV) technologies have emerged as a potentially major technology for power generation in the world. So far ,the PV field has been dominated by silicon devices, even though this technology is still expensive. Dye-sensitized solar cells (DSC) are an important type of thin-film photovoltaics due to their potential for lowcost fabrication and versatile applications, and because their aesthetic appearance, semi-transparency and different color possibilities are attractive for architectural applications. This advantage makes DSC the first choice for building integrated photovoltaics. Despite their great potential, DSCs for building applications are still not available at commercial level. However, to bring DSCs to a marketable product, several developments are still needed and the present project aims to provide relevant answers to three key limitations: encapsulation, glass substrate enhanced electrical conductivity and more efficient and low-cost rawmaterials. The team already successfully addressed the hermetic devices sealing by developing a laser-assisted glass sealing procedure.

BI-DSC is divided into two research, though parallel, directions: a fundamental research line, contributing to the development of the new generation DSC technology; and a more applied research line targets the development of a DSC functional module that can be used to pave the way for its industrialization.

PROJECT RESULTS

BI-DSC envisages the development of DSC modules with a size of 30x30cm², containing four individual cells, and their incorporation in a 1m² double glass sheet arrangement for Building Integrated PV (BIPV) with an energy efficiency of at least 9% and a lifetime of 20 years. Additionally, it aims at enhanced efficiency of the final device and decreased total costs of DSCs manufacturing, for which new materials will be also pursued. The following inner-components were identified as critical: carbon-based counter-electrode; carbon quantum-dots and hierarchically TiO2 photoelectrode.







BlackBox

A Collaborative Platform to Document Performance Composition: from Conceptual Structures in the Backstage to Customizable Visualizations in the Front-End

INFORMATION

Contract Number

336200

Theme

ERC

Instrument

ERC-SG

Total Cost

1.378.200 €

EC Contribution

1.378.200 €

Coordinator EC Contribution

1.378.200 €

Project Start Date

01-May-14

Scientific Coordinator

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Duration

60 Months

Project Website www.clunl.edu.pt/pt/?det=1511

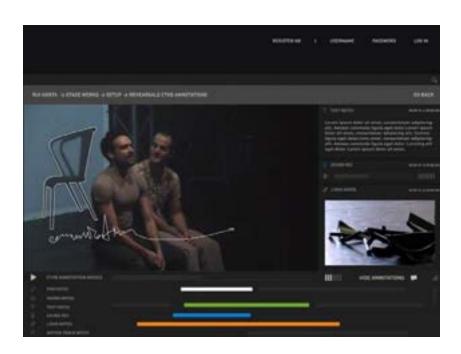
ABSTRACT (Project Objectives & Description of Work)

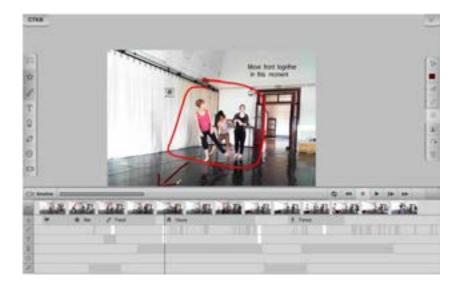
The global performing arts community is urging the need for innovative systems which: (i) document, transmit and preserve the unexplored knowledge contained in performance composition processes; (ii) assist artists with tools to facilitate their choreographic or dramaturgic practices, preferably on a collaborative basis. Currently existing digital archives for performing arts mostly function as linear e-libraries, not allowing higher degrees of interactivity or active user intervention. They rarely contemplate accessible video annotation tools or provide advanced relational querying functionalities based on artist-driven conceptual principles or idiosyncratic ontologies. The BlackBox project endeavours to fill this gap and create a new paradigm for the documentation of performance composition. As an Arts&Science project, it aims at the analysis of artists' unique conceptual structures, by combining the empirical insights of contemporary creators with research theories from Multimodal Communication (human interaction, gesture studies, cognitive science) and Digital Media studies.

The main challenge is to design a cutting-edge model for a web-based collaborative platform enabling both a robust representation of the implicit knowledge behind performing practices and novel visualization technologies to support it. This challenge can be met by analysing recurring body movement patterns and by fostering online contributions of users (a.o. performers and researchers) to the multimodal contents stored in the platform.

PROJECT RESULTS

To accomplish the project's goal, two subjacent components must be developed: (i) the production of a 3D-augmented video annotation-tool to allow practitioners in rehearsal periods to sketch over video in real-time and share their annotations (drawings, text, marks or voice) with peers via the collaborative platform; (ii) the linguistic analysis of a multimodal corpus of interviews to artists with corresponding rehearsal videos as primary source for the extraction of indicative conceptual structures, which will guide the architectural structure and interface design of the collaborative platform software. The outputs of these two components will generate critical case-studies to help understanding the human mind when engaged in cultural production processes.





C.O.C.O. Circuits of Con-Specific Observation

INFORMATION

Contract Number

337747

Theme

ERC

Instrument

ERC-SG

Total Cost

1.412.376 €

EC Contribution

1.412.376 €

Coordinator EC Contribution

1.412.376 €

Project Start Date

01-Dec-13

Scientific Coordinator

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Duration

60 Months

Project Website http://cordis.europa.eu/projects/r cn/111304_en.html

ABSTRACT (Project Objectives & Description of Work)

A great deal is known about the neural basis of associative fear learning. However, many animal species are able to use social cues to recognize threats, a defence mechanism that may be less costly than learning from self-experience. The team previously showed that rats perceive the cessation of movement-evoked sound as a signal of danger and its resumption as a signal of safety. To study transmission of fear between rats, the behaviour of an observer while witnessing a demonstrator rat display fear responses has been assessed.

With this paradigm C.o.C.O will take advantage of the accumulated knowledge on learned fear to investigate the neural mechanisms by which the social environment regulates defense behaviours.

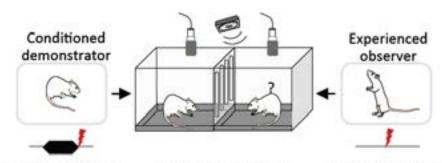
PROJECT RESULTS

C.o.C.O will unravel how the brain uses defense behaviours as signals of danger and how it contributes to defense mechanisms at the population level.

The neural circuits involved in detecting the transition from movementevoked sound to silence will be unraveld. Moreover, the mechanism by which prior experience contributes to observational freezing will be determined. Finally, as the detection of and responses to threat are often inherently social, these behaviours will be studied in the context of large groups of individuals.

To circumvent the serious limitations in using large populations of rats, C.o.C.O will resort to a different model system, the fruit fly. Behavioural tasks, where conditioned demonstrator flies signal danger to other naïve ones, will be developed.

This project involves a single participant

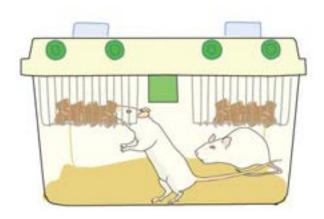


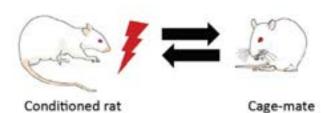
Prior experience

Social interaction

Prior experience

Day 1 Exposure to boxes Day 2 Prior Experience Day 3 Social Interaction





CENTRIOL STRUCTNUMBER

CENTRIOL Control of Centriole Structure And Number

INFORMATION

Contract Number

261344

Theme

ERC

Instrument

ERC-SG

Total Cost

1.500.000 €

EC Contribution

1.500.000 €

Coordinator EC Contribution

1.500.000 €

Project Start Date

01-Jan-11

Scientific Coordinator

Mónica Bettencourt Dias (mdias@igc.gulbenkian.pt)

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Duration

60 Months

Project Website

www.igc.gulbenkian.pt/research/

unit/80

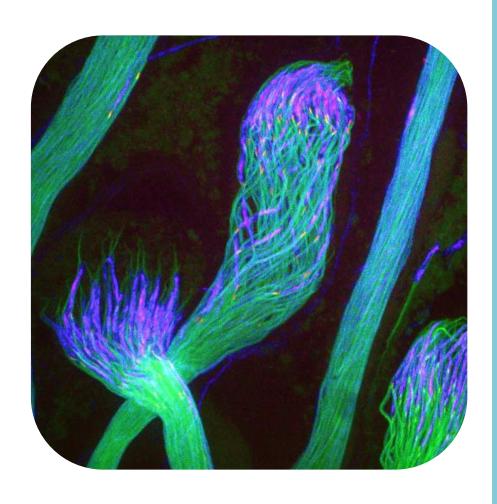
ABSTRACT (Project Objectives & Description of Work)

Centrioles form cilia, flagella and centrosomes, structures in our cells that are required for several functions, from cell motility to division. Centrosome defects are seen in many cancers, while abnormalities in cilia and flagella can lead to a variety of human diseases, such as polycystic kidney disease. The mechanisms regulating centriole formation only recently started to be unravelled, opening new ways to answer a wide range of questions that have fascinated biologists for more than a century.

CENTRIOLSTRUCTNUMBER is asking two fundamental questions that are central to human disease: how is centriole structure and number established and regulated in the cell. To address these questions, new molecular players will be identified, and the role of these and known players will be tested in the context of specific hypothesis, using in vitro and *in vivo* experimental models. Novel assays for centriole structure and regulation will be developed in order to address mechanistic problems not accessible with today's assays. A multidisciplinary approach combining bioinformatics with high throughput screening will be followed.

PROJECT RESULTS

The use of in vitro systems will permit the quantitative dissection of molecular mechanisms, while the study of those mechanisms in the fruit fly will allow to understand them at the whole organism level. Furthermore, this analysis, together with studies in human tissue culture cells, will allow the understanding of the consequences of misregulation of these fundamental centriole properties for human disease, such as ciliopathies and cancer.



ComplexiTE

An Integrated Multidisciplinary Tissue Engineering Approach Combining Novel High-Throughput Screening and Advanced Methodologies to Create Complex Biomaterials-Stem Cells Constructs

INFORMATION

Contract Number

321266

Theme

ERC

Instrument

ERC-AG

Total Cost

2.320.000 €

EC Contribution

2.320.000 €

Coordinator EC Contribution

2.320.000 €

Project Start Date

01-May-13

Scientific Coordinator

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UNIVERSIDADE DO MINHO

GRUPO 3B'S

Largo do Paço

4704-553 BRAGA

Duration

60 Months

Project Website

http://cordis.europa.eu/projects/r cn/108479_en.html

ABSTRACT (Project Objectives & Description of Work)

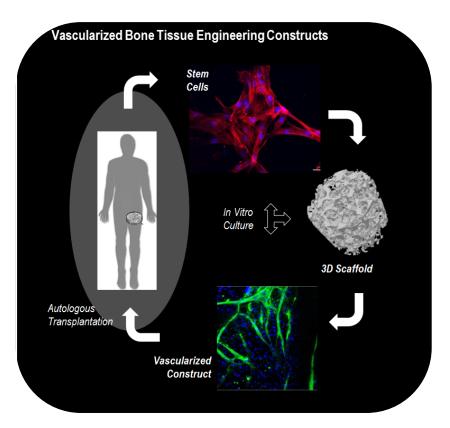
New developments on tissue engineering strategies should realize the complexity of tissue remodelling and the inter-dependency of many variables associated to stem cells and biomaterials interactions. ComplexiTE proposes an integrated approach to address such multiple factors in which different innovative methodologies are implemented, aiming at developing tissue-like substitutes with enhanced in vivo functionality.

PROJECT RESULTS

Several ground-breaking advances are expected to be achieved, including:

- (i) improved methodologies for isolation and expansion of subpopulations of stem cells derived from standard and less explored sources such as bone marrow and adipose tissue;
- (ii) new macromolecules isolated from renewable resources, especially from marine origin;
- (iii) a microfluidic-based device for the automatic compounding of the cell-containing macromolecules liquid droplets to form hydrogel's beads and arrays;
- (iv) a new platform to independently screen the performance of (sub)-population(s) of stem cells with distinct biomaterials in 3D arrays;
- 3D bioreactors for improved culture of the produced beads coupled to a novel material sorting method;
- (vi) validated random 3D arrays that allow animal experimentation minimization;
- (vii) cues to produce novel constructs to support cells in clinical meaningful bone regeneration strategies;
- (viii) new 3D vascularized bone tissue engineering constructs combining distinct processing technologies and the identified relevant cues and culture conditions.





DAMAGECONTROL

Tissue Damage Control Regulates The Pathogenesis of Immune Mediated Inflammatory Diseases

INFORMATION

Contract Number

294709

Theme

ERC

Instrument

ERC-AG

Total Cost

2.306.197 €

EC Contribution

2.306.197 €

Coordinator EC Contribution

2.306.197 €

Project Start Date

01-Apr-12

Scientific Coordinator

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Duration

60 Months

Project Website http://cordis.europa.eu/projects/r

cn/102989_en.html

ABSTRACT (Project Objectives & Description of Work)

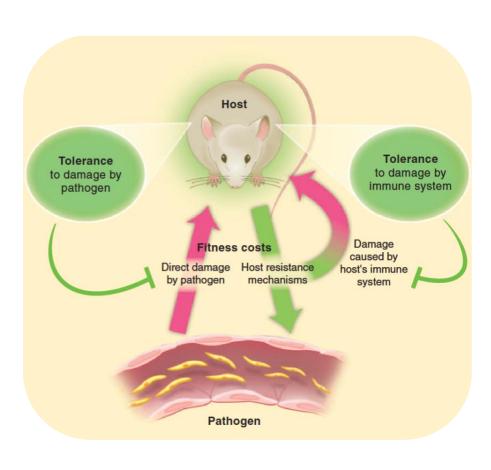
DAMAGECONTROL proposes to study evolutionarily conserved stress and damage-responsive genetic programs that limit the extent of tissue damage caused by infection, which, without a countervailing response, would lead to irreversible tissue damage and disease. This protective mechanism, referrered as "tissue damage control", is essential to the establishment of disease tolerance, an ancestral host defense strategy against infection that limits disease severity irrespectively of pathogen burden, as opposed to resistance to infection, which limits host disease severity by reducing pathogen burden. The central aim of DAMAGECONTROL is testing to what extent tissue damage control mechanisms are required to allow immune-mediated pathogen clearance to operate without causing tissue damage and disease. The research team hypothesized that this relies on the action of a number of functionally related stress and damage-responsive genetic programs that provide metabolic adaptation and limit cellular damage during infection. These are being identified and charaterized.

DAMAGECONTROL should unveil what the team believes to be an essential component of immunity that decouples pathogen clearance from tissue damage and disease, namely tissue damage control. The data obtained is expected to provide new therapeutic targets to suppress the pathogenesis of a broad range of immune mediated inflammatory diseases.

PROJECT RESULTS

Data obtained under DAMAGECONTROL suggests that tissue damage control can be enforced by different mechanisms including: (i) cellular adaptive responses that prevent the deleterious effects of stress and damage; (ii) neutralization of toxins and other virulence factors causing stress and damage and/or; (iii) immunoregulation towards limiting stress and damage caused by resistance mechanisms.

Failure of any of these regulatory mechanisms to prevent tissue damage during infection exacerbates disease, irrespectively of pathogen load. It follows that the severity of infectious diseases should probably be perceived as a direct outcome of the extent of stress, dysfunction and/or damage imposed to host tissues.



DEPENDABLECLOUD

Towards the Dependable Cloud: Building the Foundations for Tomorrow's Dependable Cloud Computing

INFORMATION

Contract Number

307732

Theme

ERC

Instrument

ERC-SG

Total Cost

1.076.084 €

EC Contribution

1.076.084 €

Coordinator EC Contribution

1.076.084 €

Project Start Date

01-Oct-12

Scientific Coordinator

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UNIV. NOVA DE LISBOA FAC. DE CIÊNCIAS E TECNOLOGIA DEP. DE INFORMÁTICA Campus da FCT/UNL Monte de Caparica 2829-516 CAPARICA

Duration

60 Months

Project Website http://cordis.europa.eu/projects/r cn/105323_en.html

ABSTRACT (Project Objectives & Description of Work)

The general topic of DEPENDABLECLOUD is cloud computing, a new computing paradigm where companies and organisations transfer part of their IT and computing infrastructure to an external provider. This enables important gains, both in terms of lowering IT costs and providing access to a much larger computing infrastructure than the one that is owned and operated by those companies and organizations.

The infrastructure underlying cloud computing services has several novel characteristics, namely in terms of the scale of the data centres where such services run, and the geographic distribution of the servers where cloud data is replicated. In this context, the project aims to research new methods for developing the services that form the cloud infrastructure, in order to improve the reliability and performance of cloud services and meet the expectations of its users.

PROJECT RESULTS

DEPENDABLECLOUD is developing a set of methods for improving the infrastructure that supports cloud services, and the applications that are deployed on top of that infrastructure. It is also developing a series of software artifacts that support these methods. In parallel, it is engaging in collaborations with a series of key players in cloud computing to increase the chances of adoption of the group's technologies.





DYBHO

The Dynamics of Black Holes: Testing the Limits of Einstein's Theory

INFORMATION

Contract Number

256667

Theme

ERC

Instrument

ERC-SG

Total Cost

915.000 €

EC Contribution

915.000 €

Coordinator EC Contribution

915.000 €

Project Start Date

01-Dec-10

Scientific Coordinator

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1049-001 LISBOA

Duration

60 Months

Project Website http://blackholes.ist.utl.pt/?page =Research

ABSTRACT (Project Objectives & Description of Work)

Black holes are now a pillar of modern physics. They play a leading role in high-energy astrophysical phenomena and are known to be tightly connected to their host galaxy growth, although the details of such mechanisms are unknown. From a conceptual viewpoint, they are fundamental in understanding for instance the cosmic censorship: are event horizons always present to hide curvature singularities? These are some of the issues that have made black holes part of the terminology of many branches of theoretical and observational physics.

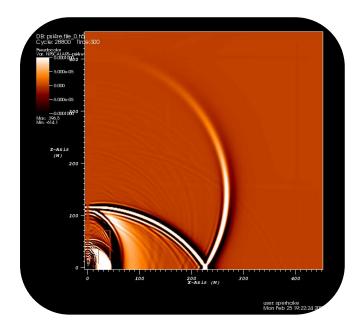
Despite the progress of the last decades, an understanding of the dynamics of black hole spacetimes is missing: How do collisions between two black holes proceed? How do black holes interact with matter? How do we handle different field equations, different theories of gravity, etc.? The aim of the DYBHO project is to answer these questions, developing analytical tools and extending the numerical machinery for very generic frameworks.

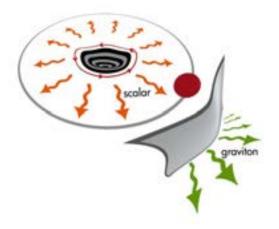
PROJECT RESULTS

Some of the most significant results obtained within DYBHO were:

- The understanding of high energy collisions in gravity-dominated processes, with consequences for fundamental issues such as Cosmic Censorship and the Hoop Conjecture. It was shown that two Black Holes colliding at nearly the speed of light release about 14% of their center-of-mass energy as gravitational waves;
- Extension of the methods of Numerical Relativity to generic spacetimes, including the organization of the first interdisciplinary meeting on Numerical Relativity methods in high-energy physics.
- The development of new methods to understand matter around black holes. The coupling of massive bosons to matter leads to two smokinggun effects of new physics: floating orbits and superradiant instabilities, allowing novel constraints on their masses.







DYNEINOME

Cytoplasmic Dynein: Mechanisms of Regulation and Novel Interactors

INFORMATION

Contract Number

338410

Theme

ERC

Instrument

ERC-SG

Total Cost

1.367.466 €

EC Contribution

1.367.466 €

Coordinator EC Contribution

1.367.466 €

Project Start Date

01-Mar-14

Scientific Coordinator

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4150-180 PORTO

Duration

60 Months

Project Website

http://cordis.europa.eu/projects/r cn/111527_en.html

ABSTRACT (Project Objectives & Description of Work)

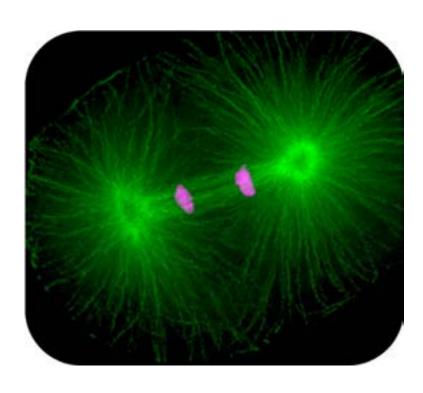
Eukaryotic cells use ATP-fueled motor proteins to transport cargo (proteins, RNA, membrane-bound vesicles) along an intricate network of polarized actin filaments and microtubules. The directional transport of intracellular components provided by motors ensures their accurate and efficient distribution, which is indispensible for cell function. DYNEINOME focuses on one of these motor proteins, cytoplasmic dynein, which transports a diverse set of cargo along microtubule tracks towards their minus ends. Dynein also generates forces by pulling on microtubules, which is important for the correct spacial organization and positioning of the microtubule cytoskeleton, particularly during cell division. The reason why a single type of dynein can perform so many functions is because it is regulated by multiple co-factors that determine when and where it binds cargo and that fine-tune motor activity depending on how much force needs to be produced. The goal of DYNEINOME is to enhance molecular understanding of how co-factors regulate dynein in space and time. The roundworm Caenorhabditis elegans is used as the animal model. C. elegans is fully transparent and offers powerful tools for manipulating gene expression, which allows to use fluorescence microscopy in live animals to study the function of dynein co-factors in dividing and non-dividing cells at different stages of development.

PROJECT RESULTS

One of the goals of Dyneinome is to understand how dynein prevents dividing cells from inheriting too many or too few chromosomes, a defect that is frequently observed in cancer cells and may contribute to tumorigenesis. It will study how co-factors recruit the motor to the unique site on each chromosome that interacts with microtubules to drive chromosome segregation.

Another goal is to identify and characterize novel co-factors that help dynein perform its many tasks. *C. elegans* is ideally suited for systematic genome-wide functional screens. Genes that when knocked down result in abnormal dynein function will be searched.

Finally, the function of the dynein co-factor dynactin, which is required for most if not all cellular processes that involve dynein, will be studied. The goal is to determine the roles of dynactin's 11 different sub-units by characterizing engineered mutant versions of the complex. This is expected to reveal how dynactin subunits contribute to dynein regulation in different cellular and developmental contexts.



ECOADAPT

Microbial Adaptation Within Ecosystems

INFORMATION

Contract Number

260421

Theme

ERC

Instrument

ERC-SG

Total Cost

1.167.600 €

EC Contribution

1.167.600 €

Coordinator EC Contribution

1.167.600 €

Project Start Date

01-Dec-10

Scientific Coordinator

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FUNDAÇÃO CALOUSTE GULBENKIAN Avenida de Berna 45 A 1067-001 LISBOA

Duration

60 Months

Project Website

http://cordis.europa.eu/projects/r cn/97063_en.html

ABSTRACT (Project Objectives & Description of Work)

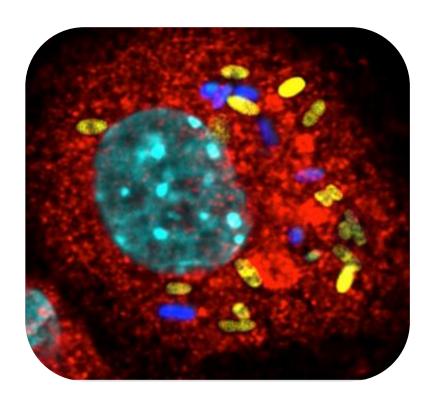
Natural populations are constantly subjected to new mutations, and frequently face new environments, to which they adapt. Despite its extreme importance, the process of adaptation is far from being understood, especially in the context of ecosystems. Theory suggests that some generalities may underlie the process of adaptation and that species interactions may be important in the dynamics of adaptation. Experimental evolution with bacteria presents us the opportunity to measure key parameters and test theoretical predictions about the genetic basis of adaptive evolution in increasingly complex ecosystems. ECOADAPT aims to understand bacterial adaptation in environments with different biotic interactions important in the context of health and disease: in the complex microbiota community of the gut and in the presence of key defense cells of the immune system, with different strengths of abiotic versus biotic interactions.

PROJECT RESULTS

ECOADAP produced two key findings:

- The selective pressure imposed by the host immune system is an important component in the transition between commensalism and pathogenicity. Results show that bacteria can evolve remarkably fast and acquire adaptations increasing survival inside cells of the innate immune system and/or ability to escape engulfment. Therefore, it is expected that such coincidental adaptation will increase the ability of bacteria to cause disease, since it simultaneously allows them to resist the immune system and their natural enemies;
- The study of the dynamics of adaptation of *E. coli* populations evolving in mammalian intestines showed that different advantageous mutations rapidly emerge and a large genetic variation in this species is generated over time. The evolution of *E. coli* in the gut of imunocompetent and imunocompromised mice is being compared aiming at understanding how the immune system influences the evolution of the microbiota.

These results have unraveled a layer of complexity of the gut microbiota, unknown so far, and will be instrumental for the development of new strategies to fight disease by manipulating gut microbes.





ELASTIC-TURBULENCE

ELASTIC- Purely-Elastic Flow Instabilities and Transition to Elastic Turbulence in Microscale Flows of Complex Fluids

INFORMATION

Contract Number

307499

Theme

ERC

Instrument

ERC-SG

Total Cost

994.110 €

EC Contribution

994.110 €

Coordinator EC Contribution

994.110 €

Project Start Date

01-Oct-12

Scientific Coordinator

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UNIVERSIDADE DO PORTO FACULDADE DE ENGENHARIA DEP. ENGENHARIA QUÍMICA Rua Dr. Roberto Frias 4200-466 PORTO

Duration

60 Months

Project Website http://cordis.europa.eu/projects/r cn/105039_en.html

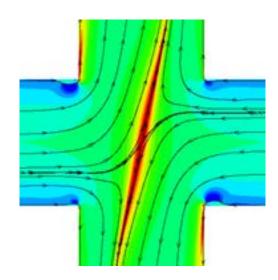
ABSTRACT (Project Objectives & Description of Work)

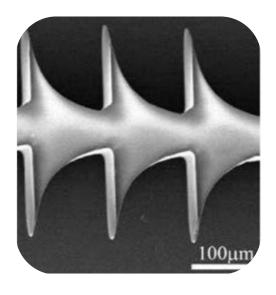
Flows of complex fluids, such as many biological and most synthetic fluids, are common in our daily life and are very important from an industrial perspective. Because of their inherent nonlinearity, the flow of complex viscoelastic fluids often leads to counterintuitive and complex behavior and, above critical conditions, can prompt flow instabilities even under low Reynolds number conditions which are entirely absent in the corresponding Newtonian fluid flows.

The primary goal of this project is to substantially expand the frontiers of current knowledge regarding the mechanisms that lead to the development of such purely-elastic flow instabilities, and ultimately to understand the transition to so-called elastic turbulence, a turbulent-like phenomenon which can arise even under inertialess flow conditions. This is an extremely challenging problem and, to significantly advance our knowledge in such important flows, these instabilities will be investigated in a combined manner encompassing experiments, theory and numerical simulations. Such a holistic approach will lead to understanding the underlying mechanisms of those instabilities and to develop accurate criteria for their prediction far in advance of what could be achieved with any single approach separately. A deep understanding of the mechanisms generating elastic instabilities and subsequent transition to elastic turbulence is crucial from a fundamental point of view and for many important practical applications involving engineered complex fluids, such as the design of microfluidic mixers for efficient operation under inertialess flow conditions, or the development of highly efficient micronsized energy management and mass transfer systems.

PROJECT RESULTS

ELASTIC-TURBULENCE is expected to expand the knowledge on the mechanisms that lead to the development of purely-elastic flow instabilities, and to understand the transition to so-called elastic turbulence.





EXOEarths

Extra-Solar Planets and Stellar Astrophysics: Towards the Detection of Other Earths

INFORMATION

Contract Number

239953

Theme

ERC

Instrument

ERC-SG

Total Cost

928.090 €

EC Contribution

928.090 €

Coordinator EC Contribution

928.090 €

Project Start Date

01-Oct-09

Scientific Coordinator

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UNIVERSIDADE DO PORTO CENTRO DE INVESTIGAÇÃO EM ASTRONOMIA E ASTROFÍSICA Rua das Estrelas 4150-762 PORTO

Duration

60 Months

Project Website www.astro.up.pt/exoearths

ABSTRACT (Project Objectives & Description of Work)

The detection of hundreds of extrasolar planets orbiting other solar-like stars opened the window to a new field of astrophysics. Many projects to search for Earth-like planets are currently under way, using a huge battery of telescopes and instruments. New instrumentation is also being developed for use in both ground and space-based facilities.

Since planets come as an output of the star formation process, the study of the stars hosting planets is of great importance. The stellar-planet connection is strengthened by the fact that (due to the methodologies used) the detection and precise characterization of planets orbiting other stars is critically dependent on our hability to characterize the properties of the star itself.

The EXOEarths program aims at doing frontier research to explore:

- the stellar limitations of the radial-velocity technique in great detail, as well as ways of reducing them, having in mind the detection of Earth-like planets;
- to develop and apply software packages aiming at the study of the properties of the planets host stars, having in mind the full characterization of the newfound planets, as well as understanding planet formation processes.

These goals will improve our capacity to detect, study, and characterize new very low mass extra-solar planets. The results of this project will have a strong impact on the exploitation of future instruments, like the ESPRESSO spectrograph for the Very Large Telescope (VLT-ESO) and ESA's CHEOPS and PLATO missions.

PROJECT RESULTS

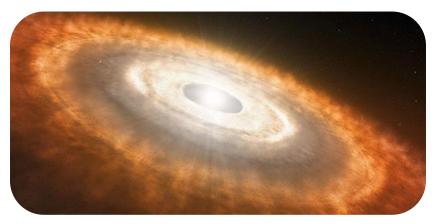
EXOEarths will make contributions to the detection of Earth-like planets and will develop and apply software packages for the study of the properties of the planet-host stars. These studies will improve our capacity to detect, study, and characterize new very low mass extra-solar planets.

The project produced a significant number of results, whose impact is fully recognized by the international community. A good example is the benchmark discovery, in late 2012, of the first Earth-mass planet orbiting the star alpha Centauri B, one star from the closest stellar system to our Sun.





ESO/L. Calçada



ESO/L. Calçada

IgYPurTech

IgY Technology: A Purification Platform Using Ionic-Liquid-Based Aqueous Biphasic Systems

INFORMATION

Contract Number 337753

Theme

ERC

Instrument

ERC-SG

Total Cost

1.386.020 €

EC Contribution

1.386.020 €

Coordinator EC Contribution

1.386.020 €

Project Start Date

01-Feb-14

Scientific Coordinator

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3810-193 AVEIRO

Duration

60 Months

Project Website http://cordis.europa.eu/projects/r cn/111015_en.html

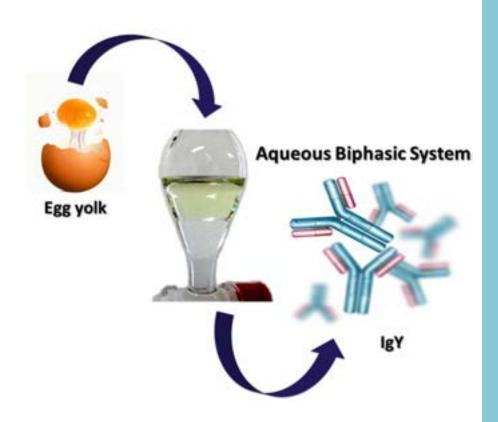
ABSTRACT (Project Objectives & Description of Work)

With the emergence of antibiotic-resistant pathogens, the development of antigen-specific antibodies for use in passive immunotherapy is nowadays a major concern in human society. Despite the most focused mammal antibodies, antibodies obtained from egg yolk of immunized hens, immunoglobulin Y (IgY), are an alternative option that can be obtained in higher quantities by non-stressful and non-invasive methods. This large amount of available antibodies opens the door for a new kind of cheaper biopharmaceuticals. However, the production cost of high-quality IgY for large-scale applications still remains higher than other drug therapies due to the lack of an efficient purification method. The search of new purification platforms is thus a vital demand to which liquid-liquid extraction using aqueous biphasic systems (ABS) could be the answer. Besides the conventional polymer-based systems, highly viscous and with a limited polarity/affinity range, a recent type of ABS composed of ionic liquids (ILs) may be employed. ILs are usually classified as "green solvents" due to their negligible vapour pressure. Yet, the major advantage of ILbased ABS relies on the possibility of tailoring their phases' polarities aiming at extracting a target biomolecule. A proper manipulation of the system constituents and respective composition allows the preconcentration, complete extraction, or purification of the most diverse biomolecules.

The proposed project contemplates the optimization of purification systems at the laboratory scale and their application in countercurrent chromatography to achieve a simple, cost-effective and scalable process.

PROJECT RESULTS

IgYPurTech is expected to develop a new technique for the extraction and purification of IgY from egg yolk using IL-based ABS. Its scalability to an industrial level will certainly allow the production of cheaper antibodies with a long-term impact in human healthcare.



INTIMATE

Citizenship, Care and Choice: The Micropolitics of Intimacy in Southern Europe

INFORMATION

Contract Number 338452

Theme ERC

Instrument **ERC-SG**

Total Cost

1.462.582 €

EC Contribution

1.462.582 €

Coordinator EC Contribution

1.462.582 €

Project Start Date

01-Mar-14

Scientific Coordinator

Ana Cristina Santos (cristina@ces.uc.pt)

UNIVERSIDADE DE COIMBRA CENTRO DE ESTUDOS SOCIAIS Colégio S. Jerónimo Largo D. Dinis, Ap. 3087 3000-995 COIMBRA

Duration

60 Months

Project Website www.intimate.ces.uc.pt

ABSTRACT (Project Objectives & Description of Work)

Changes in personal life in recent decades illustrate significant sociocultural transformations. However, the focus of mainstream sociological literature has been the heterosexual, monogamous and reproductive couple, with little research exploring non-conventional intimacy in Southern Europe. INTIMATE's main aim is to contribute to legal, policy and cultural innovation through the findings of a comparative research project designed to rethink citizenship, care and choice from the point of view of non-standard intimacies in three contrasting Southern European countries: Italy, Portugal and Spain.

Guided by the fundamental sociological question of how change takes place and how law and social policy adjust to and/or shape the practices and expectations of individuals concerning personal life, this research will address intimacy from the perspective of those on the margins of social, legal and policy concerns in Southern Europe – lesbians, gay men, bisexuals and transgendered people.

INTIMATE is based on 3 strands – Strand 1: the micropolitics of partnering; Strand 2: the micropolitics of parenting; and Strand 3: the micropolitics of friendship. This qualitative research involves conducting 6 cross-national studies across the strands of partnering, parenting and friendship. The topics covered are lesbian coupledom, polyamorous relationships, assisted conception and surrogacy, naming a child, transgender and care, and living with friends in adult life.

PROJECT RESULTS

INTIMATE's findings will impact on current legal, policy and cultural frameworks in Italy, Portugal and Spain, but also at the EU level. In order to maximize political impact, we will liaise with national, EU and Concil of Europe institutions and actors, not only as key sources of information but also as interlocutors interested in issues related to family, gender and sexuality. Expected results include a range of both international and national publications targeting academia and beyond, thematic conferences and participatory workshops, policy briefs, media briefs and an interactive website.







INVISIBLE

Advanced Amorphous Multicomponent Oxides for Transparent Electronics

INFORMATION

Contract Number

228144

Theme

ERC

Instrument

ERC-SG

Total Cost

2.250.000 €

EC Contribution

2.250.000 €

Coordinator EC Contribution

2.250.000 €

Project Start Date

01-Jan-09

Scientific Coordinator

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UNIV. NOVA DE LISBOA FAC. DE CIÊNCIAS E TECNOLOGIA DEP. DE CIÊNCIA DOS MATERIAIS Campus da FCT/UNL Monte de Caparica 2829-516 CAPARICA

Duration

60 Months

Project Website http://cordis.europa.eu/projects/r cn/89165_en.html

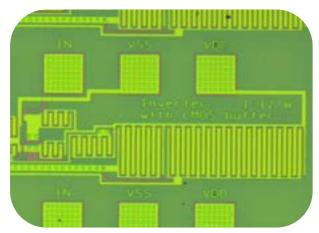
ABSTRACT (Project Objectives & Description of Work)

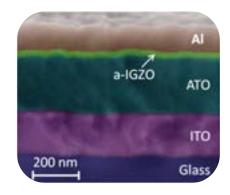
Imagine having fully transparent and flexible, foldable, low cost, displays or at the glass window of your home/office, a transparent electronic circuit do you believe on that? Maybe you are asking me if this is science fiction. No, it is not. In fact this is a very ambitious objective but is tangible in the framework of this project due to the already acquired experience in the development of transparent thin film transistors using novel multifunctional and multicomponent oxides that can behave as active or passive semiconductor materials. This was an interdisciplinary research project aiming to develop a new class of transparent electronic components, based on multicomponent passive and active oxide semiconductors (n and p-types), to fabricate the novel generation of full transparent electronic devices and circuits, either using rigid or flexible substrates. The emphasis was put on developing thin film transistors (n and p-TFTs) and integrated circuits for a broad range of applications (from inverters, C-MOS like devices, ring oscillators, CCDs backplanes for active matrices, biossensor arrays for DNA/RNA/proteins detection), boosting to its maximum their electronic performances for the next generation of invisible circuits. By doing so, INVISIBLE contributed for generating a free real state electronics able to add new electronic functionalities onto surfaces, which currently are not used in this manner and that silicon cannot contribute. These will facilitate a migration away from tradition silicon like fab based batch processing to large area, roll to roll manufacturing technology which will offer significant advantages.

PROJECT RESULTS

As a result of INVISIBLE, paper batteries that can be used in cell phones, computers, tablets, games consoles, diagnostic kits and all other types of electronic devices were developed. The batteries are recharged by the atmosphere humidity, both indoors and outdoors, once the percentage of humidity in the air is higher than 40%, which is a constant all year round in countries with a humid temperate or tropical or boreal climate, and during most of the year in countries with a Mediterranean climate.







NanoTrigger

Triggerable Nanomaterials to Modulate Cell Activity

INFORMATION

Contract Number

307384

Theme

ERC

Instrument

ERC-SG

Total Cost

1.699.320 €

EC Contribution

1.699.320 €

Coordinator EC Contribution

1.699.320 €

Project Start Date

01-Nov-12

Scientific Coordinator

Lino Ferreira

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CENTRO DE NEUROCIÊNCIAS

E BIOLOGIA CELULAR

Largo Marquês de Pombal

Universidade de Coimbra

3004-517 COIMBRA

Duration

60 Months

Project Website http://cordis.europa.eu/projects/r cn/105782_en.html

ABSTRACT (Project Objectives & Description of Work)

The advent of molecular reprogramming and the associated opportunities for personalised and therapeutic medicine requires the development of novel systems for on-demand delivery of reprogramming factors into cells in order to modulate their activity/identity.

Such triggerable systems should allow precise control of the timing, duration, magnitude and spatial release of the reprogramming factors. Nano Trigger aims at developing triggerable systems able to release efficiently reprogramming factors on demand.

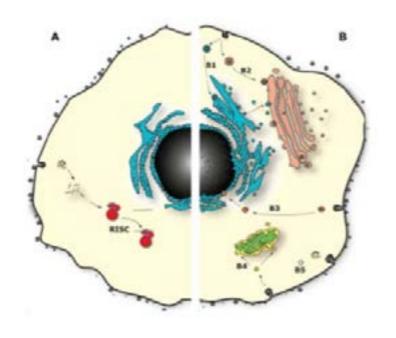
The proposed research involves a highly multidisciplinary team formed by engineers, chemists, biologists, encompassing elements of engineering, chemistry, system biology, stem cell technology and nanomedicine.

The novelty of this project relies on the combination of three components: stem cells isolated from umbilical cord blood, mixed with cells of the blood vessels which are themselves derived stem cells and a biomimetic gel, i.e., a gel produced by components found in blood.

PROJECT RESULTS

Triggerable systems able to release efficiently reprogramming factors on demand have been devoloped and their biocompatibility has been evaluated in vitro.





NEUROHABIT

Neural Mechanisms of Action Learning and Action Selection: from Intent to Habit

INFORMATION

Contract Number

243393

Theme

ERC

Instrument

ERC-SG

Total Cost

1.526.304 €

EC Contribution

1.526.304 €

Coordinator EC Contribution

756.950 €

Project Start Date

01-Nov-09

Scientific Coordinator

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FUNDAÇÃO D. ANNA SOMMER CHAMPALIMAUD E DR. CARLOS MONTEZ CHAMPALIMAUD Avenida Brasília 1400-038 LISBOA

Duration

60 Months

Project Website http://cordis.europa.eu/projects/r cn/92842_en.html

ABSTRACT (Project Objectives & Description of Work)

In every day life, we constantly have to select the appropriate actions to obtain specific outcomes. Actions can be selected based on their consequences, e.g., when we press an elevator button to get to the particular floor where we live. This goal-directed behaviour is crucial to face the ever-changing environment but demands an effortful control and monitoring of the response. One way to balance the need for flexibility and efficiency is through automatization of recurring decision processes as a habit.

Habitual responses no longer need the evaluation of their consequences, and can be elicited by particular situations or stimuli, e.g., when we press the button for our home floor in a building that we are visiting for the first time. There is growing evidence that the neural circuits underlying intentional or goal-directed actions are different from those underlying habits.

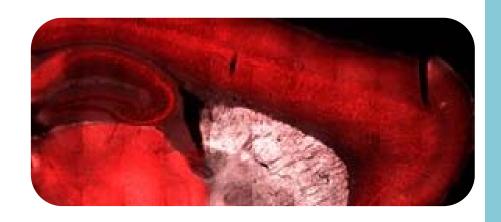
The dissection of the molecular and circuit mechanisms underlying goaldirected and habitual responses is critical to understand decision-making, and the origins of compulsive behaviour.

PROJECT RESULTS

A novel procedure where mice learn to shift between goal-directed and habitual lever-pressing in the same manipulandum was developed, allowing to record, for the first time, the activity of the same neurons during goal-directed vs. habitual actions. It was found that the same neurons displayed different activity during action execution depending on whether the action is goal-directed or habitual. The results suggested that goal-directed and habitual actions are concurrently encoded in corticostriatal circuits that dynamically change during behavioural shifting.

The direct- and indirect-pathway striatal neuron activity was measured and transient increases in neural activity in both direct- and indirect-pathway spiny projection neurons when animals initiated actions have been documented, but not when they were inactive. Furthermore, NEUROHABITS uncovered that inhibition of both direct and indirect pathway neurons would disrupt sequence initiation.

FUNDAÇÃO CALOUSTE GULBENKIAN -Portugal



P.S.

Post Scriptum: A Digital Archive of Ordinary Writings (Early Modern Portugal and Spain)

INFORMATION

Contract Number

295562

Theme

ERC

Instrument

ERC-AG

Total Cost

1.815.857 €

EC Contribution

1.815.857 €

Coordinator EC Contribution

1.815.857 €

Project Start Date

01-Apr-12

Scientific Coordinator

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UNIVERSIDADE DE LISBOA FACULDADE DE LETRAS DEP. DE LINGUÍSTICA GERAL E ROMÂNICA Alameda da Universidade 1600-214 LISBOA

Duration

60 Months

Project Website www.clul.ul.pt/en/researchteams/462-post-scriptum-home

ABSTRACT (Project Objectives & Description of Work)

The goal of the P.S. (Post Scriptum) Project is to collect and publish Portuguese and Spanish private letters, written during the Early Modern period by people from different social backgrounds. The manuscripts have been kept unpublished as an exhibit within civil and religious court proceedings.

The discovery of such unusually preserved texts will be used to elaborate on these four principles, established by linguistics, anthropology and cultural history: (i) no language varieties are inferior to others; (ii) human imagination and emotions are never irrelevant; (iii) communicative behaviour is never absolutely transparent; and (iv) we never have direct access to the worlds of others.

PROJECT RESULTS

Main results expected for 2017:

- The scholarly digital edition of 7,000 private letters made in the ordinary life of individuals from different social groups between 1500 and 1834 (letters in Portuguese and in Spanish, translations in English);
- Two fully annotated historical corpora of 1M words each, containing uses of language in the context of everyday life;
- A database with biographic information about the authors and the addressees linked to detailed information on situational contexts;
- A series of studies articulating methodologies and concepts from different areas of knowledge: Historical Linguistics, Corpus Linguistic, and Cultural History.







ParasiteNutri Sensing

Nutrient Sensing by Parasites

INFORMATION

Contract Number

311502

Theme

ERC

Instrument

ERC-SG

Total Cost

1.500.000 €

EC Contribution

1.500.000 €

Coordinator EC Contribution

1.500.000 €

Project Start Date

01-Dec-12

Scientific Coordinator

Maria Mota

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INST. DE MEDICINA MOLECULAR
Faculdade de Medicina
da Universidade de Lisboa
Av. Professor Egas Moniz
1649-029 LISBOA

Duration

60 Months

Project Website http://cordis.europa.eu/projects/r cn/106248_en.html

ABSTRACT (Project Objectives & Description of Work)

The overall goal of the Project is to unveil the molecular mechanisms by which parasites are capable to sense and adapt to environmental signals originated from nutrients, and to determine its impact on the course and virulence of infection.

To that end, it is proposed to: (i) Identify Plasmodium pathway(s) that sense host nutritional changes; (ii) Uncover which molecules are sensed by Plasmodium during its intracellular development; (iii) study the impact of the parasite's nutrient sensing pathways activity on the course of infection; and (iv) evaluate host nutritional status sensing as a common feature in parasites, independent of the host-parasite interface.

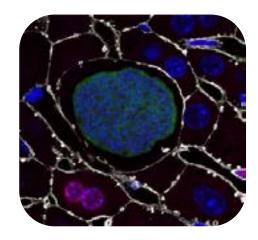
The research will be most focused on Plasmodium, the causative agent of Malaria, given the past experience of the Laboratory, but it will include other parasites such as Trypanosoma, which is responsible for Sleeping Sickness.

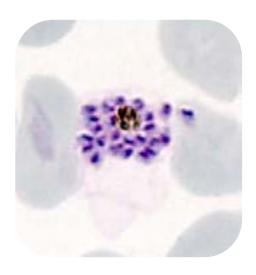
The rationale behind ParasiteNutriSensing is that parasites monitor host nutritional environment and, prior to any nutrients becoming limiting, are able to respond and adapt to the sensed alterations.

PROJECT RESULTS

ParasiteNutriSensing will identify Plasmodium pathway(s) that sense host nutritional changes; uncover which molecules are sensed by Plasmodium during its intracellular development; study the impact of the parasites nutrient sensing pathways activity on the course of infection; and evaluate host nutritional status sensing as a common feature in parasites.

Results arising from this project will provide novel insights into the cell biology of Plasmodium, Trypanossoma or other parasites, and will increase our understanding of the interactions that these parasites maintain with their hosts.





PhONICs

Positioning of the Nucleous for Cell Migration and Muscle Fiber Function

INFORMATION

Contract Number 617676

Theme

ERC

Instrument

ERC-SG

Total Cost

1.968.000 €

EC Contribution

1.968.000 €

Coordinator EC Contribution

1.968.000 €

Project Start Date

01-Jul-14

Scientific Coordinator

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INST. DE MEDICINA MOLECULAR
Faculdade de Medicina
da Universidade de Lisboa
Av. Professor Egas Moniz
1649-029 LISBOA

Duration

60 Months

Project Website http://imm.fm.ul.pt

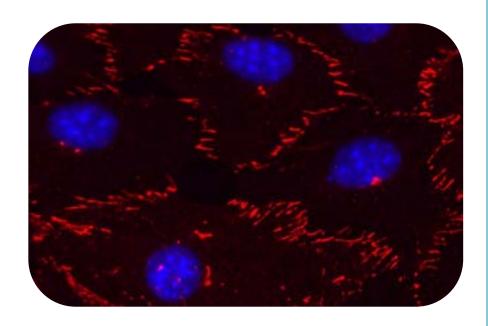
ABSTRACT (Project Objectives & Description of Work)

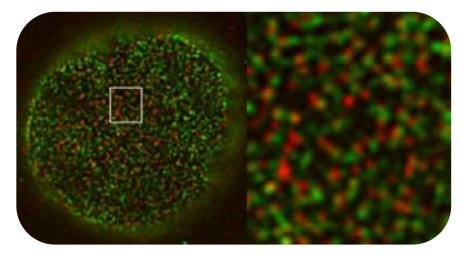
The cell nucleus is positioned at specific places within the cytoplasm and this position is important for different cellular, developmental and physiological processes. Nuclear positioning depends on connections between nuclear envelope proteins and the cytoskeleton. In cells that are moving in particular directions to specific locations (migrating cells), the nucleus is positioned away from the front of the cell and this event is important for cell polarization and migration. In the fully developed myofibers (fibers that compose the muscle), nuclei are specifically positioned at the periphery, while during development and regeneration, as well as in multiple muscle pathologies, the nucleus is centrally positioned. In previous studies, new nuclear envelope proteins involved in nuclear positioning and new mechanisms that drive nuclear movement during myofiber formation have been found. It was also shown that nuclear position is important for muscle function. However, the reason why nuclear positioning is important for myofiber activity still remains an open question.

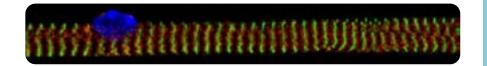
PhONICs now proposes to use unique systems to monitor cell migration and myofiber formation in combination with biochemistry, cell biology, high- and super-resolution microscopy approaches to: (i) identify novel molecular mechanisms that mediate nuclear positioning and nuclear cytoskeleton connections during cell migration and myofiber formation; (ii) determine a role for nuclear positioning in myofiber function as well as the significance of altered nuclear positioning in different forms of muscle pathology.

PROJECT RESULTS

The proposed work will establish new mechanisms for nuclear positioning. Importantly, by identifying mechanisms and understanding the role of nuclear positioning in myofiber function, it will lay the foundations for future studies to ameliorate or treat muscle disorders as well as other conditions where nucleus positioning may prove to play a role such as cancer.







PRECISE

Spatiotemporal Regulation of Chromosome Segregation Fidelity

INFORMATION

Contract Number

260892

Theme

ERC

Instrument

ERC-SG

Total Cost

1.485.097 €

EC Contribution

1.485.097 €

Coordinator EC Contribution

1.485.097 €

Project Start Date

01-Jan-11

Scientific Coordinator

Helder Maiato

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INSTITUTO DE BIOLOGIA MOLECULAR E CELULAR Rua do Campo Alegre 823

4150-180 PORTO

Duration

60 Months

Project Website

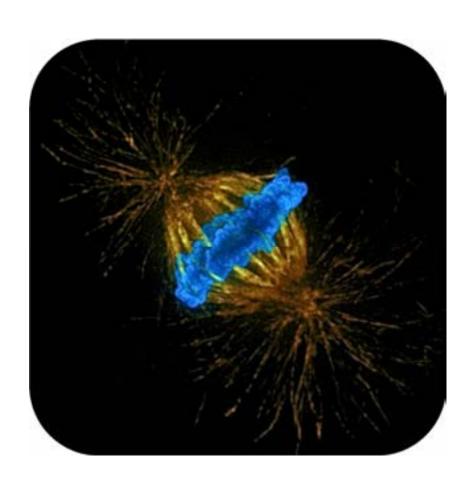
http://cordis.europa.eu/projects/r cn/96821_en.html

ABSTRACT (Project Objectives & Description of Work)

At any given moment, 250 million cells are dividing in the human body through an essential process known as mitosis. Inaccuracy of mitosis leads directly to aneuploidy (gain or loss of chromosomes), a hallmark of several cancers and birth defects. Mitotic fidelity is controlled by the spindle assembly checkpoint (SAC), a signaling pathway that delays the progression of mitosis to ensure that all chromosomes are attached to mitotic spindle microtubules (MTs). Central to this activity, the kinetochore (KT), a minute structure on each replicated sister-chromatid, promotes the rapid turnover of MTs to correct potential attachment errors during early mitotic stages. Upon anaphase onset, the KT then switches to bind MTs with higher affinity, so that the energy derived from their depolymerizing plus ends helps driving chromosome motion to the poles. While the molecular basis of the KT-MT interface is only now starting to be known, how the multiple KT activities are regulated throughout mitosis remains unknown. PRECISE proposes to dissect, from a molecular perspective, how the interaction between spindle MTs and KTs controls chromosome segregation fidelity in space and time. For this purpose, PRECISE will combine the power of biochemical analysis and genome-wide RNAi screens with the detailed functional investigation of already identified candidate genes using state-of-the-art live cell microscopy and pilot laser microsurgery tools in animal cells. All the necessary conditions to investigate the physiological significance of chromosome segregation errors and evaluate respective outcomes using unique mammalian model systems are available.

PROJECT RESULTS

PRECISE expects to clarify how the interaction between spindle MTs and KTs controls chromosome segregation fidelity in space and time. With its synergistic approach, it will contribute to unveil the molecular routes of aneuploidygenesis and their implications to human health.



ProteinLocalization

Finding New Mechanisms for Protein Localization in Bacteria

INFORMATION

Contract Number

310987

Theme

ERC

Instrument

ERC-SG

Total Cost

1.656.960 €

EC Contribution

1.656.960 €

Coordinator EC Contribution

1.656.960 €

Project Start Date

01-Mar-13

Scientific Coordinator

Mariana Pinho (mgpinho@itqb.unl.pt)

ITQB – INST. DE TECNOLOGIA QUÍMICA E BIOLÓGICA DA UNIV. NOVA DE LISBOA Avenida da República 2781-901 OEIRAS

Duration

60 Months

Project Website www.itqb.unl.pt/research/biology /bacterial-cell-biology

ABSTRACT (Project Objectives & Description of Work)

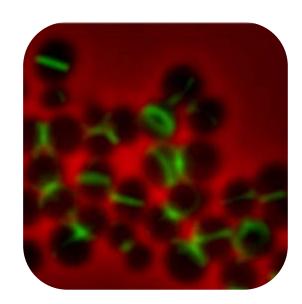
During infection, the host immune system interacts with the bacterial cell surface, a complex structure made of peptidoglycan, wall teichoic acids, lipoteichoic acids, capsule polysaccharide and peptidoglycan-attached proteins. A lot is known about the metabolic pathways for the synthesis of each individual cell surface component. Almost nothing is known about the coordination between the synthesis of the peptidoglycan, the major structural component of the cell surface and the main inflammatory component of gram-positive bacteria, and the synthesis of the other molecules present at the surface. However, this coordination is essential for the construction of a surface capable not only of performing its biological functions in cell protection and morphology, but also of masking its inflammatory components for evasion from host recognition.

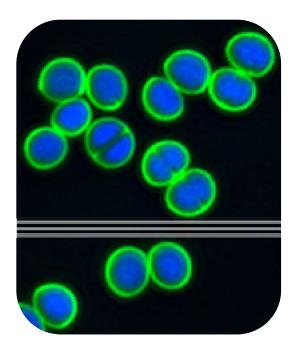
Using the clinical pathogen Staphylococcus aureus as a model organism, ProteinLocalization proposes to investigate the temporal and spatial regulation of the enzymes responsible for the synthesis of the cell surface components, as well as their dependence on the underlying divisome.

PROJECT RESULTS

ProteinLocalization will result in the identification of new mechanisms of protein localization, a fundamental question in cell biology, and in a better understanding of the process of assembly of the bacterial cell surface of successful bacterial pathogens.

State-of the art fluorescence microscopy will be used to (i) localize fluorescent derivatives of enzymes required for cell surface synthesis; (ii) use libraries of antibiotics, of antisense RNA expression plasmids, and of transposon mutants to identify the order of assembly and requirements for the localization of cell surface synthesis enzymes; (iii) identify the exact metabolic compound/protein/geometric cue responsible for the localization of key enzymes; (iv) determine if cells with impaired surface synthesis due to protein delocalization are more susceptible to host recognition and therefore less capable of causing infections.





RESEAL

Epithelial Resealing

INFORMATION

Contract Number

208631

Theme

ERC

Instrument

ERC-SG

Total Cost

1.150.000 €

EC Contribution

1.150.000 €

Coordinator EC Contribution

702.628 €

Project Start Date

01-Nov-08

Scientific Coordinator

António Jacinto*

(ajacinto@fcm.unl.pt)

FUNDAÇÃO CALOUSTE GULBENKIAN Avenida de Berna 45 A 1067-001 LISBOA

Duration

72 Months

Project Website http://cordis.europa.eu/projects/r cn/88535 en.html

ABSTRACT (Project Objectives & Description of Work)

Epithelia have an essential role of acting as a barrier that protects living organisms and its organs from the surrounding milieu. Therefore, it is crucial for epithelial tissues to have robust ways of maintaining its integrity despite the frequent damage caused by normal cell turnover, inflammation and injury. This project focussed on the capacity that several simple epithelial tissues have to reseal small discontinuities through the contraction of an actomyosin purse string in the leading edge cells around the wound margin. The *Drosophila* embryonic epithelium was the primary model system. The project also addressed epithelial wounding assays in zebrafish simple epithelial tissues by studying the molecular mechanisms that the project will uncover using *Drosophila*.

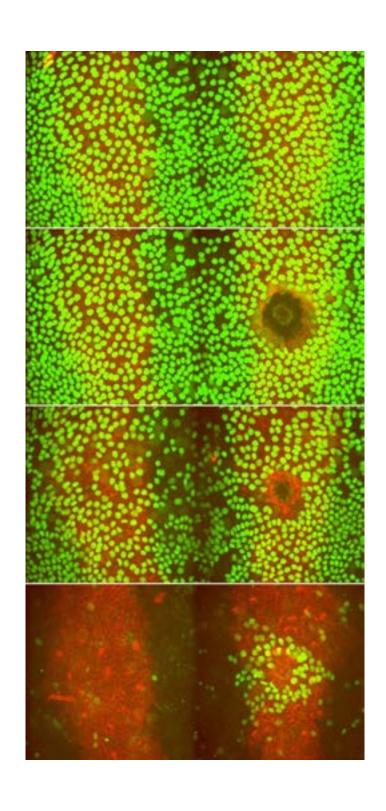
PROJECT RESULTS

RESEAL investigated the epithelial resealing using a combination of genetics and high resolution live imaging. The *Drosophila* embryonic epithelium was used to perform a RNAi genetic screen based on a large collection of transgenic lines. The work led to the the dicovery of new molecular and celular mechanisms involved in wound repair and to the identification of several new genes that play important roles in this process.

The conservation of the function of those genes was studied in wounding assays in zebrafish simple epithelial tissues. It was demonstrated that genes identified in *Drosophila* wound repair also play importante roles in vertebrates, opening the possibility to continue this studies in the future, in mamals and possibly in humans.

Currently at CEDOC - Centro de Estudos deDoenças Crónicas Fac.de Ciências Médicas, Universidade Nova de Lisboa

INSTITUTO DE MEDICINA MOLECULAR -Portugal



RetImmuneFunction

Role of the Proto-Oncogene Ret During lymphocyte Development and Function

INFORMATION

Contract Number

207057

Theme

ERC

Instrument

ERC-SG

Total Cost

1.901.400 €

EC Contribution

1.901.400 €

Coordinator EC Contribution

1.901.400 €

Project Start Date

01-Nov-08

Scientific Coordinator

José Henrique Fernandes (jhfernandes@medicina.ulisboa.pt)

INST. DE MEDICINA MOLECULAR
Faculdade de Medicina
da Universidade de Lisboa
Av. Professor Egas Moniz
1649-028 LISBOA

Duration

60 Months

Project Website http://cordis.europa.eu/projects/r cn/87416_en.html

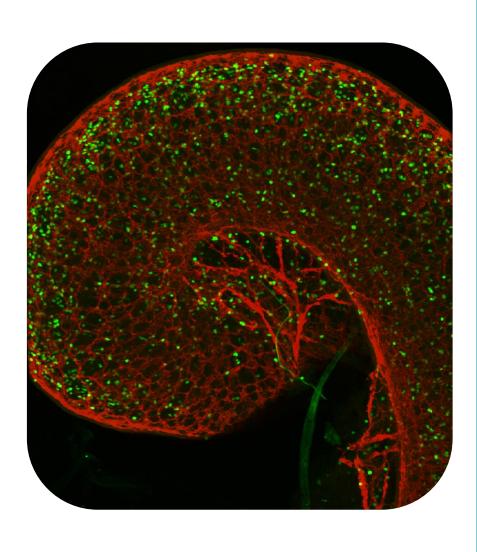
ABSTRACT (Project Objectives & Description of Work)

There is growing evidence suggesting that cells from the immune system may sense environmental cues, but the mechanisms by which they perceive, integrate and respond to their environment remains poorly understood. It was hypothesised that dietary and neurotrophic factors, which critically control neuronal function, are also central orchestrators of white blood cells, notably lymphocytes, and that these factors are key communication paths between lymphocytes and their environment. Thus, this project aims at using the combined genetic, cellular, and molecular approaches in order to determine, quantify and manipulate the function of specific dietary and neurotrophic factors in white blood cell formation and function.

PROJECT RESULTS

The project revealed that both dietary and neurotrofic factors are pivotal molecules, acting as communication hubs between lymphocytes and their environment. More specifically, it was found that a maternal dietary component derived from vitamin A controls the development of specific innate lymphocytes, setting the immune fitness of the offspring later in life. In addition, the project revealed that neurotrophic factors are key regulators of the formation of intestinal lymphoid organs and control the response of haematopoietic stem cells to physiological demand.

This project, apart from its novelty in the field of immunology, will have a broader impact in other disciplines. It was demonstrated that environmental cues shape lymphocytes and that mechanisms historically ascribed to a specific tissue are used more generally in order to orchestrate the function and communication among different systems.



T CELL(S) DIFFER

Differentiation of Pro-Inflammatory T Cell Subsets In Vivo

INFORMATION

Contract Number

260352

Theme

ERC

Instrument

ERC-SG

Total Cost

1.500.000 €

EC Contribution

1.500.000 €

Coordinator EC Contribution

1.500.000 €

Project Start Date

01-Dec-10

Scientific Coordinator

Bruno Silva Santos (bssantos@medicina.ulisboa.pt)

INST. DE MEDICINA MOLECULAR
Faculdade de Medicina
da Universidade de Lisboa
Av. Professor Egas Moniz
1649-029 LISBOA

Duration

60 Months

Project Website http://cordis.europa.eu/projects/r cn/100492_en.html

ABSTRACT (Project Objectives & Description of Work)

Our understanding of T cell differentiation impacts on vaccine development and on the treatment of immune disorders. T cells are key players in inflammation, a crucial component of the immune response to pathogens that causes severe damage to the host when uncontrolled. The cytokines Interferon- γ (IFN- γ) and Interleukin-17 (IL-17) are critical mediators of the proinflammatory activity of T cells usually designated as T helper 1 (Th1) and Th17, respectively.

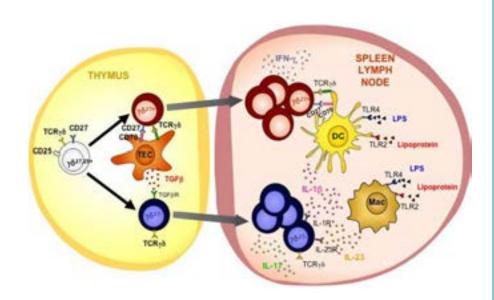
T_CELL(S)_DIFFER proposes to investigate the contribution of various T cell lineages (CD4+ and CD8+ cells, $\gamma\delta$ and NKT cells) to global Th1 or Th17 immune responses. Importantly, it will study Th1/ Th17 differentiation in vivo, in models of infection with bacteria, viruses or parasites.

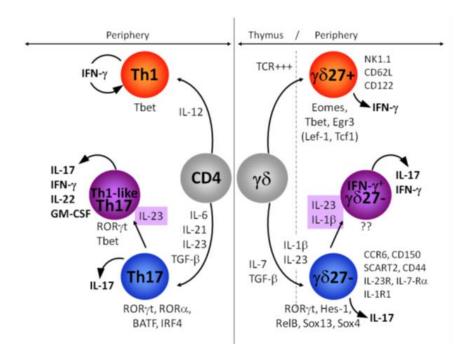
By contrast to the generalized focus on CD4+ T cells, this project will consider Th1/Th17 differentiation of all T cell lineages and their in vivo contributions to relevant models of infection. This holistic view of organism-based immune parameters and their underlying molecular mechanisms will significantly advance our understanding of how the Immune System works.

PROJECT RESULTS

T_CELL(S)_DIFFER identified a new set of molecular rules governing the differentiation of T cell populations that produce IFN-γ, a key cytokine for anti-viral and anti-tumor immune responses, or IL-17, which is critical to fight fungi and extracellular bacteria. It also described the epigenetic mechanisms and networks of transcription factors that regulate the differentiation of these cells and the expression of the signature cytokines *in vivo*.

T_CELL(S)_DIFFER thus provided new insights into the biology of proinflammatory T cells, which is of great translational importance both to boost immunity against pathogens, and to prevent immune pathology in chronic inflammatory and autoimmune diseases.





Transrights

Gender citizenship and sexual rights in Europe: Transgender lives from a transnational perspective

INFORMATION

Contract Number

Grant agreement no.: 615594

Theme

ERC

Instrument

ERC - StG

Total Cost

1.262.943 €

EC Contribution

1.262.943 €

Coordinator EC Contribution 1.262.943 €

Project Start Date 01-Sep-2014

Scientific Coordinator

Sofia Aboim

INST. DE CIÊNCIAS SOCIAIS DA UNIVERSIDADE DE LISBOA Av. Prof. Aníbal de Bettencourt 9 1600-189 LISBOA

Duration

60 Months

Project Website

TBA

ABSTRACT (Project Objectives & Description of Work)

The TRANSRIGHTS project investigates transgender lives and the institutional apparatus that frames them.

Four lines of inquiry will be developed:

- Firstly, gender politics and sexual rights shall be analysed as the opposition between politics of equality and of difference is unable to provide answers for the inclusion of trans-people.
- Secondly, by comparing the lives of trans-people in five European countries Portugal, France, United Kingdom, the Netherlands and Sweden the project wishes to establish an overview of how institutional frameworks impact on these lives.
- Thirdly, the approach of the project takes into account the immigration of trans-individuals to Europe, whether in search for recognition or as a way of survival, often leading to sex work.
- Fourthly, through a comparative strategy, the project also aims to identify the gaps between policies and rights and the categories actually mobilized for self-identification. Such a task implies examining the voices of trans-people, the effect of policies on the materiality of lives as well as conceptualizations of selfhood that do not necessarily confine to the European context.

PROJECT RESULTS

By analysing trans-people, *Transrights* is posing key questions on normality and subversion. In providing answers to this problem, it is not only discussing the viability of atypical lives and transitions but also further advancing the knowledge on how forms of recognition and redistribution are institutionally enacted. Project outputs will contribute to the fields of gender, sexuality and citizenship by providing a grounded theoretical debate, discussing the gender categories of citizenship.



Universal Banking

Universal Banking, Corporate Control and Crises

INFORMATION

Contract Number

312558

Theme

ERC

Instrument

ERC-SG

Total Cost

1.174.000 €

EC Contribution

1.174.000 €

Coordinator EC Contribution

1.174.000 €

Project Start Date

01-Mar-13

Scientific Coordinator

Miguel Ferreira (miguel.ferreira@novasbe.pt)

UNIV. NOVA DE LISBOA FACULDADE DE ECONOMIA Campus de Campolide 1099-032 LISBOA

Duration

60 Months

Project Website www.novasbe.unl.pt/en/newsand-events/what-s-up/535universal-banking-corporatecontrol-and-crises

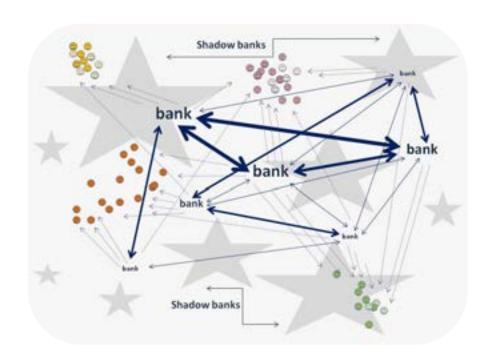
ABSTRACT (Project Objectives & Description of Work)

Financial intermediaries play a vital role in providing capital to corporations. The 2007-2009 financial crisis had dramatic consequences on the organization of the financial system that led to the rise of universal banking and financial conglomerates. Financial conglomerates act as lenders but also underwrite and trade securities, have equity stakes and sit on the board of corporations, and manage mutual and pension funds that invest in corporations. This project studies the effect of control by financial conglomerates on corporation's performance, investment, and financing, as well as corporate governance policies. The existence and rise of financial conglomerates not only pose challenges to the ways corporations operate, but also pose challenges to the ways that financial conglomerates internally operate. In particular, many financial conglomerates around the world have developed large asset management divisions.

The aim of Universal Banking is to study whether the performance of funds portfolios is affected by being affiliated to a financial conglomerate relative to being independent, non-affiliated, funds.

PROJECT RESULTS

Using a sample of nonfinancial firms from 34 countries during the 2007-2009 financial crisis with systemic and bank-specific shocks, the research group found that bank distress is associated with equity valuation losses and investment cuts to borrower firms with the strongest lending relationships with banks. The losses are not offset by borrowers' access to public debt markets and are concentrated in firms with the greatest information asymmetry problems and with the weakest financial positions. Additionally, using abnormal performance measures from a worldwide sample of mutual funds over 2000-2010, the research group found that funds affiliated with commercial banks underperform unaffiliated funds by 35 basis points per year and that most of this lower performance arises when the global economy experiences a period of economic recession. The project showed that portfolio managers of affiliated funds place larger bets in stocks of firms that borrow from their fund's affiliated bank relative to stocks of non-borrowing firms. Moreover, it was found that, during economic recessions, stocks of lending clients underperform non-borrowing stocks.







PEOPLE - MARIE CURIE ACTIONS

AGRO-AMF-AOX

A Functional Marker of Commercial AMF Isolates for Sustainable Agriculture

INFORMATION

Contract Number

251464

Theme

People

Instrument

MC-IAPP

Total Cost

533.942 €

EC Contribution

533.942 €

Coordinator EC Contribution

278.297 €

Project Start Date

03-Dec-10

Scientific Coordinator

Birgit Arnholdt-Schmitt (eu_chair@uevora.pt)

UNIVERSIDADE DE ÉVORA INSTITUTO CIÊNCIAS AGRÁRIAS E AMBIENTAIS MEDITERRÂNICAS Largo dos Colegiais 2 7000-803 ÉVORA

Duration

48 Months

Project Website http://cordis.europa.eu/projects/ 251464

ABSTRACT (Project Objectives & Description of Work)

The proposal aims to strengthen a recent relationship between a SME from Germany and an established Marie Curie Chair from Portugal for lasting research collaboration. The company (INOQ) produces arbuscular mycorrhiza fungi (AMF) for application in sustainable agriculture. Commercial AMF application can significantly improve the stability of plant production. The importance of the symbiosis between AMF and plants in the rhizosphere is increasingly recognized in plant production for healthy food and feed, but also for energy and industrial plants and the maintenance of soil structures. The market for AMF products is steadily growing and the involved SME shows a good standing in the field.

During the project, the two partners will intensively exchange competences and both will recruit experienced staff to reach the common goals and strengthen their capacities for interaction. A novel spin-off company will be founded in Portugal that links both partners for the post-project phase as members of the Consortium.

SCIENTIFIC FIELD

Agricultural Production/Sustainable agriculture

INOQ GMBH - Germany





BAHIA16-19

Salvador da Bahia: American, European, and African Forging of a Colonial Capital City

INFORMATION

Contract Number

318988

Theme

People

Instrument

MC-IRSES

Total Cost

195.300 €

EC Contribution

195.300 €

Coordinator EC Contribution

151.200 €

Project Start Date

01-Sep-12

Scientific Coordinator

Pedro Cardim (cpa@fcsh.unl.pt)

UNIV. NOVA DE LISBOA FACULDADE DE CIÊNCIAS SOCIAIS E HUMANAS DEP. DE HISTÓRIA Avenida de Berna 26C 1069-061 LISBOA

Duration

48 Months

Project Website
http://fcsh.unl.pt/phd./media/ne
ws/bahia-16-19.-americaneuropean-and-african-forging-ofa-colonial-capital-city

ABSTRACT (Project Objectives & Description of Work)

The project Bahia16-19 aims at creating a top-level research and advanced training network, giving birth to a trans-Atlantic web of faculties and advanced students specialized in the long-term history of colonial Atlantic. The partners have chosen to focus on Salvador da Bahia, and to study its role and functions as a capital city in an imperial context. In the European settlement at Salvador da Bahia, native cultures and African forced migration created a multi-cultural society. This city thus undoubtedly represents an exceptional place. Covering the period from the 16th century to the post-independence era, the project will produce an archival based and reflexive addition of up-to-date knowledge.

A major output of the project consists of a joint Masters on Trans-Atlantic colonial history. Such a course will be a dramatic move forward in the relations between the European, the Brazilian and the African schools.

SCIENTIFIC FIELD

Trans-Atlantic History

ECOLE DES HAUTES ETUDES EN SCIENCES SOCIALES – France

PARTNERS FROM THIRD COUNTRIES

UNIVERSIDADE FEDERAL DA BAHIA - Brazil

BAHIA 16-19

American, European, and African forging of a colonial capital city





Cooperation

Towards an Understanding of Cooperation in an African Passerine Bird

INFORMATION

Contract Number

318994

Theme

People

Instrument

MC-IRSES

Total Cost

142.800 €

EC Contribution

142.800 €

Coordinator EC Contribution

63.000 €

Project Start Date

01-Mar-11

Scientific Coordinator

Rita Covas

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ICETA - INSTITUTO DE CIÊNCIAS E TECNOLOGIAS AGRÁRIAS E AGRO-ALIMENTARES Rua D. Manuel II Ap. 55142 4051-401 PORTO

Duration

48 Months

Project Website http://cordis.europa.eu/projects/r cn/106410_en.html

ABSTRACT (Project Objectives & Description of Work)

The project aims to understand the fitness bases of cooperation in an endemic southern African passerine and the consequences of cooperation for population dynamics through its effects on reproductive output, survival and dispersal. This projects builds upon a unique long-term study of an African bird, now focussing on the evolution of different cooperative behaviours, cooperative breeding, nest building and predator mobbing, as well as on the relationship between cooperation, fitness, dispersal and long-term population dynamics.

This is a central theme in biology with wide interest, since cooperation is widespread in nature (including among humans). This exchange of researchers with complementary skills from three European countries and South Africa will accomplish a synergistic collaboration that will overcome the constraints, in terms of skills and funding, of the individual group members involved.

This exchange is expected to have a substantial positive impact on the training of the involved researchers and students and it will increase the quality and productivity of their research work. It is also expected to lead to important networking and long-lasting partnerships between the researchers and participant organisations.

SCIENTIFIC FIELD

Life Sciences

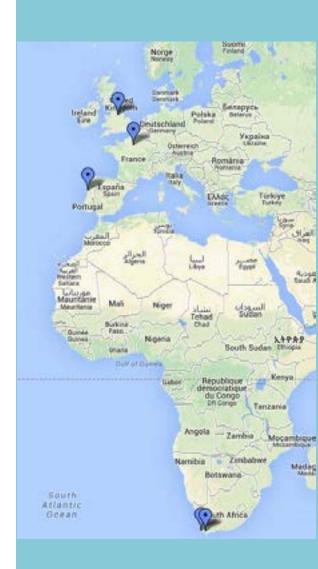
CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE – France

THE UNIVERSITY OF SHEFFIELD United Kingdom

PARTNERS FROM THIRD COUNTRIES

Percy FitzPatrick Institute of African Ornithology - South Africa

South African National Biodiversity Institute - South Africa



DEVASSES

Design, Verification and Validation of Large Scale, Dynamic Service Systems

INFORMATION

Contract Number

612569

Theme

People

Instrument

MC-IRSES

Total Cost

354.900 €

EC Contribution

354.900 €

Coordinator EC Contribution

180.600 €

Project Start Date

01-Jan-14

Scientific Coordinator

Marco Vieira (mvieira@dei.uc.pt)

UNIVERSIDADE DE COIMBRA
FAC. DE CIÊNCIAS E TECNOLOGIA
DEP. ENG. INFORMÁTICA
R. SÍlvio Lima, Pólo II
3030-789 COIMBRA

Duration

48 Months

Project Website www.devasses.eu

ABSTRACT (Project Objectives & Description of Work)

The DEVASSES project aims at taking a step forward in the design and deployment of large-scale, dynamic service-based software systems by supporting the transfer of knowledge on novel state of the art methods, techniques, and tools for both design time and run time verification and validation. The goal is to reinforce the cooperation among the partners through a coordinated program of exchange of researchers, taking as context a common research problem, which provides the frame for the scientific activities of the project and cannot currently be tackled by any of the partners individually.

The expected results of the project include joint research activities, focused training activities, and joint workshops, designed to exploit complementary expertise and to create synergies among the partners, establishing the basis for sustainable future cooperation at different levels, including:

- co-advising of PhD candidates;
- joint organization of international events (workshops, conferences, summer schools, etc.);
- participation in bilateral project proposals;
- participation in large-scale international project proposals.

SCIENTIFIC FIELD

Computer Science.

UNIVERSITÀ DEGLI STUDI DI FIRENZE – Italy

PARTNERS FROM THIRD COUNTRIES

UNIVERSIDADE ESTADUAL DE CAMPINAS -

UNIVERSIDADE FEDERAL DE ALAGOAS - Brazil









EKRUCAml

Europe-Korea Research on Ubiquitous Computing and Ambient Intelligence

INFORMATION

Contract Number

318878

Theme

People

Instrument

MC-IRSES

Total Cost

210.000 €

EC Contribution

210.000 €

Coordinator EC Contribution

126.000 €

Project Start Date

01-Jan-13

Scientific Coordinator

Carlos Ramos (csr@sc.ipp.pt)

INST. POLITÉCNICO DO PORTO

R. Dr. Roberto Frias

4200-465 PORTO

Duration

48 Months

Project Website http://ekrucami.ipp.pt

ABSTRACT (Project Objectives & Description of Work)

This project deals with Ubiquitous Computing (UbiComp) and Ambient Intelligence (AmI) in the areas of smart meeting rooms, health and agriculture monitoring. UbiComp and AmI have huge potential as they could facilitate new applications and services in a wide range of fields, promoting personal productivity and enhancing competitiveness.

The EKRUCAml project is a multidisciplinary initiative based on a balanced exchange of scientists with different level of expertise among four universities, two from Europe and two from South Korea.

During the four years of the project, the four universities expect to build a R&D network with focus on the better understanding of UbiComp and AmI and their applications. They also intend to train new researchers in these thematic areas, promoting an international cooperation approach and new research/application fields, focusing the industry requirements. It is also envisaged to identify the opportunity to promote technology transfer from Academia to the Economy, by means of the launching of new spin-offs.

SCIENTIFIC FIELD

Information and Communication Technology, Artificial Intelligence.

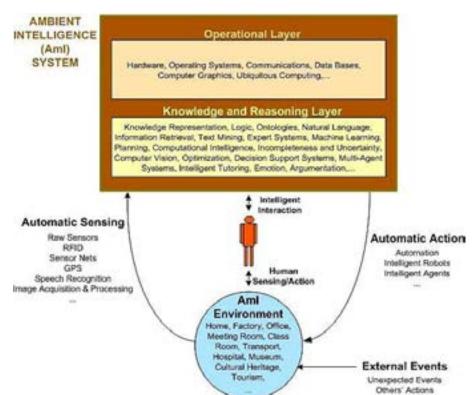
UNIVERSIDAD DE SALAMANCA - Spain

PARTNERS FROM THIRD COUNTRIES

CATHOLIC UNIVERSITY OF DAEGU - Korea SUNCHON NATIONAL UNIVERSITY - Korea









ELECON

Electricity Consumption Analysis to Promote Energy Efficiency Considering Demand Response and Non-technical Losses

INFORMATION

Contract Number

318912

Theme

People

Instrument

MC-IRSES

Total Cost

445.200 €

EC Contribution

445.200 €

Coordinator EC Contribution

165.900 €

Project Start Date

01-Oct-12

Scientific Coordinator

Zita Vale

(zav@isep.ipp.pt)

INST. POLITÉCNICO DO PORTO

R. Dr. Roberto Frias

4200-466 PORTO

Duration

48 Months

Project Website http://elecon.ipp.pt

ABSTRACT (Project Objectives & Description of Work)

The ELECON project focuses on the establishment of a competent and fruitful network between EU and Brazilian researchers to contribute to the successful implementation of smart grids. ELECON is an innovative scientific and exchange scheme aiming at making advances on electricity consumption analysis methods and on the way they are used to promote energy efficiency. This project will focus on the design and use of demand response (DR) and on the identification of non-technical losses, for their crucial role in the sustainability of energy systems and its relevance to ensure the correctness of energy billing, respectively.

The proposed program aims at the creation of new links for collaboration and the strengthening of already existing partnerships between highly renowned scientific research teams as well as the establishment of solid scientific communication by building an extended multidisciplinary scientific network.

SCIENTIFIC FIELD

Intelligent Energy Systems

OTTO-VON-GUERICKE-UNIVERSITAET MAGDEBURG - Germany

INSTITUT POLYTECHNIQUE DE GRENOBLE - France

PARTNERS FROM THIRD COUNTRIES

UNIVERSIDADE DE SÃO PAULO - Brazil

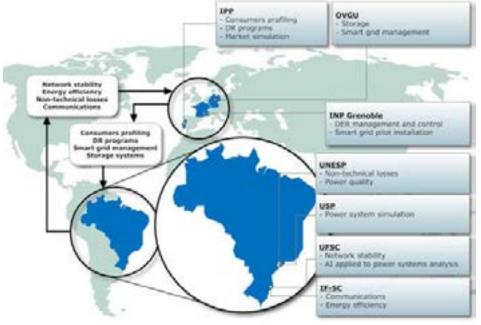
UNIVERSIDADE ESTADUAL PAULISTA "JÚLIO MESQUITA FILHO" – Brazil

UNIVERSIDADE FEDERAL DE SANTA CATARINA – Brazil

INSTITUTO FEDERAL DE SANTA CATARINA - Brazil









ELECTROACROSS

Electrokinetics Across Disciplines and Continents: an Integrated Approach to Finding New Strategies to Sustainable Development

INFORMATION

Contract Number

269289

Theme

People

Instrument

MC-IRSES

Total Cost

398.200 €

EC Contribution

370.900 €

Coordinator EC Contribution

264.500 €

Project Start Date

01-Mar-11

Scientific Coordinator

Alexandra Branco Ribeiro (abr@fct.unl.pt)

FUNDAÇÃO DA FACULDADE DE CIÊNCIAS E TECNOLOGIA DA UNIV. NOVA DE LISBOA Campus da FCT/UNL Monte de Caparica 2829-516 CAPARICA

Duration

48 Months

Project Website sites.fct.unl.pt/electroacross

ABSTRACT (Project Objectives & Description of Work)

The socio-economic activities due to world development are promoting increasing pressures on land, creating competition and conflicts, resulting in suboptimal use of resources. Integrated planning and management of land resources is a top subject of Agenda 21 (managed by FAO), which deals with the cross-sectoral aspects of decision-making for the sustainable use and development of natural resources. In this context, there is a need to find new strategies for sustainable development that link social and economic progress with environmental protection and enhancement.

Electrokinetic transport processes (EK) use a low-level direct current as the cleaning agent. EK has been applied to the remediation of polluted soils and other contaminated matrices. It also shows a great potential to be used in different fields, as in saline soil restoration, nutrients recovery from wastes or repair and maintenance of building structures. EK may be an integrated approach for new strategies aiming at sustainable development and to support waste strategies, with worldwide interest.

This network will organise knowledge transfer activities among a network of centres of excellence in Europe and in other continents to consolidate an European School of Electrokinetics. Joint new research on fundamentals and applied EK and its optimization will develop new strategies for sustainable development and achieve solutions with a social-economic impact.

SCIENTIFIC FIELD

Sustainable management of land and natural resources

UNIVERSIDADE DO ALGARVE – Portugal UNIVERSIDAD DE MALAGA – Spain DANMARKS TEKNISKE UNIVERSITET – Denmark

PARTNERS FROM THIRD COUNTRIES

UNIVERSIDAD TECNICA FEDERICO SANTA MARIA – Chile

INSTITUTE OF SOIL SCIENCE CHINESE ACADEMY OF SCIENCES - China

CENTRE FOR GREEN CHEMISTRY, MONASH UNIVERSITY – Australia

PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA – Russia

UNIVERSIDADE FEDERAL DE MINAS GERAIS — Brazil

LEHIGH UNIVERSITY — United States





ForEAdapt

Knowledge Exchange Between Europe and America on Forest Growth Models and Optimization for Adaptive Forestry

INFORMATION

Contract Number

269257

Theme

People

Instrument

MC-IRSES

Total Cost

516.600 €

EC Contribution

516.600 €

Coordinator EC Contribution

266.700 €

Project Start Date

01-Feb-11

Scientific Coordinator

Jordi Garcia-Gonzalo (jordigarcia@isa.ulisboa.pt)

UNIVERSIDADE DE LISBOA INST. SUPERIOR DE AGRONOMIA DEP. RECURSOS NATURAIS, AMBIENTE E TERRITÓRIO Tapada da Ajuda 1349-017 LISBOA

Duration

48 Months

Project Website www.isa.utl.pt/cef/pub/foreadapt

ABSTRACT (Project Objectives & Description of Work)

ForEAdapt aims at strengthening research collaboration through active networking, staff exchange and dissemination activities between four European organizations from Portugal, Finland, Spain and Sweden, and five American organizations from Chile, Brazil and USA.

The project focuses on forestry and climate change interactions, and aims to develop tools for enhanced integration of adaptive strategies in forest management planning. Three major scientific topics have been identified: forest models, mathematical optimisation and decision support systems.

A large number of publications have been prepared as a result of many scientific visits. In addition, conferences and 4 research seminars have been organized. The main findings (Decision Support Systems - DSS) of the project have been presented in international conferences and workshops:

- A DSS including novel techniques and growth and yield models for Portugal have been created, targeting the oak ecosystems' scenario analysis, including multiple objectives;
- A DSS for strategic forest planning under climate change developed for Eucalypt plantations;
- A DSS for multi-objective forest planning problems in maritime pine forests.

SCIENTIFIC FIELD

Forestry



SVERIGES LANTBRUKSUNIVERSITET - Sweden

ITÄ-SUOMEN YLIOPISTO - Finland
UNIVERSIDAD POLITECNICA DE MADRID –
Spain

PARTNERS FROM THIRD COUNTRIES

UNIVERSIDAD DE CHILE - Chile

PONTIFICIA UNIVERSIDAD CATOLICA DE CHILE - Chile

UNIVERSIDADE DE SAO PAULO - Brazil

THE PENNSYLVANIA STATE UNIVERSITY - United States

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY - United States



GETFUN

Generalizing Truth-Functionality

INFORMATION

Contract Number

318986

Theme

People

Instrument

MC-IRSES

Total Cost

222.000 €

EC Contribution

222.000 €

Coordinator EC Contribution

71.400 €

Project Start Date

01-Jan-13

Scientific Coordinator

Carlos Caleiro

(carlos.caleiro@lx.it.pt)

INST. DE TELECOMUNICAÇÕES
Instituto Superior Técnico
Torre Norte - Piso 10
Av. Rovisco Pais 1
1049-001 LISBOA

Duration

48 Months

Project Website http://sqig.math.ist.utl.pt/GeTFun

ABSTRACT (Project Objectives & Description of Work)

The Fregean-inspired Principle of Compositionality of Meaning (PoC), for formal languages, may be construed as asserting that the meaning of a compound expression is deterministically (and often recursively) analysable in terms of the meaning of its constituents, taking into account the mode in which these constituents are combined so as to form the compound expression. From a logical point of view, this amounts to prescribing a constraint -- that may or may not be respected -- on the internal mechanisms that build and give meaning to a given formal system. Within the domain of formal semantics and of the structure of logical derivations, PoC is often directly reflected by metaproperties such as truth-functionality and analyticity, characteristic of computationally well-behaved logical systems.

The GetFun exchange programme, hosting a total of more than 100 months of mutual visits, is aimed at strengthening the already existing cooperation links between the participating institutions (14) and researchers (25), by setting up solid foundations for fruitful scientific connections between Europe and Brazil, transfer of knowledge, advanced training and cooperative research in the areas touched by the project's topic, future exchange and/or co-supervision of Postdoc and PhD students, and joint organization of scientific events.

The project GeTFun aims at being a coordinated exchange programme for the investigation of compositional meaning in logic and applications. The consortium will study various well-motivated ways in which the attractive properties and metaproperties of truth-functional logics may be stretched so as to cover more extensive logical grounds.

SCIENTIFIC FIELD

Mathematics, Logic



INSTITUTUL DE MATEMATICA AL ACADEMI EI ROMANE INSTITUTE OF MATHEMATICS SIMION STOILOW OF THE ROMANIAN ACA DEMY - Romania

INSTYTUT PODSTAW INFORMATYKI POLSKIEJ AKADEMII NAUK - Poland

TEL AVIV UNIVERSITY - Israel

TECHNISCHE UNIVERSITAET WIEN - Austria

THE ACADEMIC COLLEGE OF TEL-AVIV-YAFFO - Israel

UNIVERSIDADE DE AVEIRO - Portugal UNIVERSITA DEGLI STUDI DI VERONA – Italy

PARTNERS FROM THIRD COUNTRIES

FUNDAÇÃO GETÚLIO VARGAS - Brazil

KRYVYI RIH NATIONAL UNIVERSITY -Ukraine

PONTIFÍCIA UNIVERSIDADE CATÓLICA DO RIO DE JANEIRO - Brazil

UNIVERSIDADE FEDERAL DO RIO DE JANEIRO - Brazil

UNIVERSIDADE FEDERAL DO RIO GRANDE DO NORTE - Brazil

UNIVERSIDADE ESTADUAL DE CAMPINAS - Brazil



GlycoPar

Parasite Glycobiology and Anti-Parasitic Strategies

INFORMATION

Contract Number

608295

Theme

People

Instrument

MC-ITN

Total Cost

3.450.856 €

EC Contribution

3.450.856 €

Coordinator EC Contribution

666.970 €

Project Start Date

01-Dec-13

Scientific Coordinator

João Rodrigues

(j.rodrigues@fm.ul.pt)

INST. DE MEDICINA MOLECULAR
Faculdade de Medicina da
Universidade de Lisboa
Av. Professor Egas Moniz
1649-028 LISBOA

Duration

48 Months

Project Website www.glycopar.eu

ABSTRACT (Project Objectives & Description of Work)

Protozoan parasites and helminths are the cause of some of the most devastating diseases worldwide and a major effort is needed to be able to control or eliminate these diseases. Glycoconjugates are abundant and ubiquitous on the surface of many parasites and they are frequently involved in their survival strategies by forming a protective barrier against host defences. However, the exquisite diversity of these glycoconjugates and of their biosynthetic machineries, the difficulties related with their structural analysis and the complexity associated with their synthesis in the laboratory, pose a tremendous challenge for the scientific community. To address these challenges, GlycoPar will establish a European based training programme in a world-class collaborative research environment steered by some of the world leaders in the fast evolving field of parasite glycobiology, in close association with European industry.

The researchers recruited through this initiative will be exposed, both at the local and network-wide level, to a multicultural and highly multidisciplinary PhD training. This programme will acquaint them with a complete range of state-of-the-art glycobiology methodologies, along with valuable transferable and entrepreneurial skills. All together, the aim is to create a PhD-level trained generation of young scientists capable of tackling the challenges that parasite glycobiology implies with improved career prospects and employability as well as preparing them to become future leaders in research institutions and in industry.

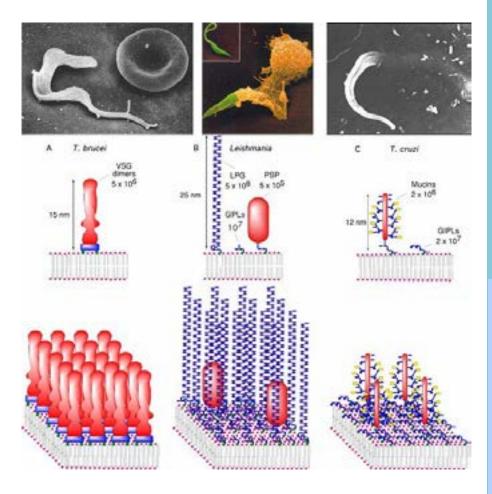
SCIENTIFIC FIELD

Life Sciences

GlycoPar
EU FP7 (Norie Curie
Initial Training Network

UNIVERSITY OF DUNDEE – United Kingdom
FUNDACIO CENTRE DE RECERCA EN SALUT
INTERNATIONAL DE BARCELONA - Spain
EIDGENOESSISCHE TECHNISCHE
HOCHSCHULE ZURICH - Switzerland
MEDIZINISCHE HOCHSCHULE HANNOVER Germany
UNIVERSITAET FUER BODENKULTUR WIEN
- Austria
LIVERPOOL SCHOOL OF TROPICAL
MEDICINE – United Kingdom
HELMHOLTZ-ZENTRUM FUER
INFEKTIONSFORSCHUNG GMBH - Germany
MALCISBO AG - Switzerland
BIOGNOS AB - Sweden
SILICOLIFE LDA - Portugal

LUDGER LTD - United Kingdom





GMOsensor

Monitoring Genetically Modified Organisms in Food and Feed by Innovative Biosensor Approaches

INFORMATION

Contract Number

612545

Theme

People

Instrument

MC-IRSES

Total Cost

340.200 €

EC Contribution

340.200 €

Coordinator EC Contribution

123.900 €

Project Start Date

01-Oct-13

Scientific Coordinator

Cristina Delerue-Matos

(cmm@isep.ipp.pt)

INSTITUTO SUPERIOR DE ENGENHARIA DO PORTO

R. Dr. A. Bernardino de Almeida, 431 4200-072 PORTO

Duration

24 Months

Project Website http://cordis.europa.eu/projects/r cn/109520_en.html

ABSTRACT (Project Objectives & Description of Work)

Most of transgenic plants are derived from crops of worldwide critical importance to food and feed producers: soybean, maize, rapeseed and cotton. In spite of the advantages presented by the genetically modified organisms (GMO), such as herbicide tolerance or resistance to insects,, their cultivation has raised numerous concerns in the European Union (EU) and other parts of the world about food safety, environmental and economic impact. To protect consumers, food and feed labelling legislation is in force in the EU and other countries such as Brazil. The verification of its compliance demands reliable and accurate GMO detection methods, but also high throughput tools able to rapidly assess the actual prevalence of transgenic material in food and feed, which is unknown.

The GMOsensor proposal intends to establish an innovative and wellorganised scientific network aiming at producing advances on nanobiosensor devices to assess the presence of GMO in food and feed products. The achievement of high throughput sensitive analysis requires novel approaches that combine different research areas.

The use of biosensors is promising since they answer to the demands of high sensitivity, specificity, and fast analysis. In this project, novel qualitative and quantitative bioanalytical methodologies (DNA- and protein-based) are proposed to answer the demands on multitarget analysis to screen and identify authorised and unauthorised GMO.

With the purpose of ensuring an efficient transfer of knowledge, during the two year life of the project, a total of three workshops will be organised, two in South America and one in Europe. These workshops shall include training sessions with an experimental part.

SCIENTIFIC FIELD

Knowledge-Based Bio-Economy

ICETA - INSTITUTO DE CIÊNCIAS E TECNOLOGIAS AGRÁRIAS E AGRO-ALIMENTARES — Portugal

UNIVERSIDAD DE OVIEDO - Spain

UNIVERSIDAD COMPLUTENSE DE MADRID - Spain

UNIVERSITE PARIS DIDEROT - France

PARTNERS FROM THIRD COUNTRIES

FUNDACAO UNIVERSIDADE FEDERAL DO PIAUI - Brazil

UNIVERSIDADE DE SAO PAULO- Brazil

FUNDACAO UNIVERSIDADE DE PERNAMBUCO- Brazil

CONSEJO NACIONAL DE INVESTIGACIONES CIENTIFICAS Y TECNICAS – ARGENTINA

UNIVERSIDAD NACIONAL DE RÍO CUARTO-ARGENTINA



GOVDIV

Multilevel Governance of Cultural Diversity in a Comparative Perspective: EU-Latin America

INFORMATION

Contract Number

612617

Theme

People

Instrument

MC-IRSES

Total Cost

602.700 €

EC Contribution

602.700 €

Coordinator EC Contribution

60.900 €

Project Start Date

01-Jan-2014

Scientific Coordinator

Beatriz Padilla (padilla.beatriz@gmail.com)

UNIVERSIDADE DO MINHO
DEP. DE SOCIOLOGIA
Campus de Gualtar
4710-057 BRAGA

Duration

48 Months

Project Website

http://cics.uminho.pt/en/multilevel-governance-of-cultural-diversity-in-a-

comparative-perspective-eu-latin-

america/

ABSTRACT (Project Objectives & Description of Work)

The overall aim of this project is to create a transnational interdisciplinary research and training network between European and Latin American Universities and Research centres in order to promote transfer of knowledge and innovative research in the field of the multilevel governance of cultural diversity in a comparative perspective. The governance of cultural diversity is a key issue for contemporary Europe and other world regions, and policy efforts should accommodate cultural diversity by balancing the recognition of differences with the promotion of equal participation in the common public sphere.

The project promotes a stronger institutionalisation of the existing collaborations among the partner institutions, and a transfer of knowledge on the issue of cultural diversity through methodological workshops, which will clarify definitions and conceptualizations, through the implementation of comparative research projects focussing on the relations between, on one side, the institutional framework and the governments' policies, and, on the other, the empirical dynamics of the cultural construction, social formation and political mobilization of collective identities, deployed by migrants, ethno-national minorities, religious minorities, indigenous peoples, i.e., looking for a holistic and extended understanding of diversity.

This network also aims at the implementation of joint courses (Master programs, doctoral studies) and the launching of a scientific journal in English..

The proposal's research outcomes will enable a better understanding of the complex dynamics in plural and multi-ethnic societies and may possibly suggest new paths for policies and governance at national and at EU-level.

SCIENTIFIC FIELD

Social Sciences – Diversity & Migration Governance.







INSTITUTO UNIVERSITARIO DE LISBOA - Portugal

UNIVERSITA DEGLI STUDI DI FIRENZE - Italy
UNIVERSIDAD DE SEVILLA - Spain

UNIVERSITE PARIS III SORBONNE NOUVELLE – France

PARTNERS FROM THIRD COUNTRIES

UNIVERSIDADE DO ESTADO DE SANTA CATARINA – Brazil

IMHICIHU INSTITUTO MULTIDISCIPLINARIO DE HISTORIA Y CIENCIAS HUMANAS, CONICET -Argentina

INSTITUTO NACIONAL DE ANTROPOLOGIA E HISTÓRIA - Mexico

UNIVERSIDAD AUTONOMA DE COAHUILA-Mexico



INFORMATION

Contract Number

317052

Theme

People

Instrument

MC-ITN

Total Cost

821.218 €

EC Contribution

821.218 €

Coordinator EC Contribution

805.818 €

Project Start Date

01-Dec-12

Scientific Coordinator

Mário Barbosa (mbarbosa@ineb.up.pt)

INEB - INSTITUTO NACIONAL DE ENGENHARIA BIOMÉDICA R. do Campo Alegre, 823 4150-180 PORTO

Duration

48 Months

Project Website www.ib2.ineb.up.pt

ABSTRACT (Project Objectives & Description of Work)

The IB² project is an elite doctorate programme at INEB, University of Porto, devised to train four highly talented fellows at the interface between academia and industry.

The programme is designed at the highest academic and industrial levels, including strong components in entrepreneurship, technology transfer and business development. It entails a training programme and a research project, and each fellow will spend 50% of time at the industrial partner's facilities.

The four Fellows received initial training in Laboratory Techniques in Biomaterials and Regenerative Medicine.

The training programme is designed to create PhDs with an entrepreneurial mindset. It involves a high quality multidisciplinary research environment, interinstitutional cooperation and international networking, and provides career development by adding the technological dimension through inclusion of a comprehensive range of transferable skills (e.g. entrepreneurship courses and career development counseling). Throughout their PhD programmes, the Fellows will attend, workshops on themes spanning from Intellectual Property Management and Regulatory Issues to Communications Skills and Research Management at all participating institutions.

SCIENTIFIC FIELD

Biomaterials and Regenerative Medicine

INSTITUTO GRIFOLS SA - Spain

ASSOCIATED PARTNERS

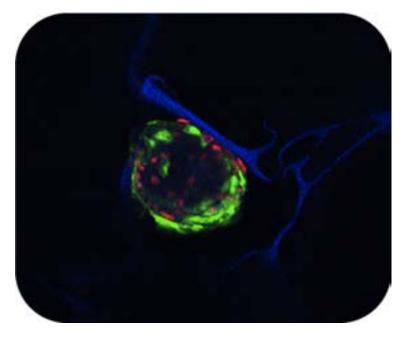
IBEC - INSTITUT DE BIOENGINYERIA DE CATALUNYA - Spain

IPATIMUP - INSTITUTO DE PATOLOGIA E IMUNOLOGIA MOLECULAR DA UNIVERSIDADE DO PORTO – Portugal

UNIVERSIDADE DO PORTO - Portugal









INFORMATION

Contract Number

610986

Theme

People

Instrument

MC-IAPP

Total Cost

1.220.895 €

EC Contribution

1.220.895 €

Coordinator EC Contribution

609.576 €

Project Start Date

01-Jan-14

Scientific Coordinator

João Freitas

(t-joaof@microsoft.com)

MSFT - SOFTWARE PARA
MICROCOMPUTADORES, LDA.
R. do Fogo de Santelmo L. 2.07.02
1990-110 LISBOA

Duration

48 Months

Project Website www.microsoft.com/ptpt/mldc/iris/default.aspx

ABSTRACT (Project Objectives & Description of Work)

The overall goal of IRIS is to provide a natural interaction communication platform accessible and adapted for all users, particularly the elderly and people with speech impairments confined to indoor. Human-Computer interaction with this platform will adopt the principles of universal design and natural user interfaces such as speech, silent speech, gestures, tactile and haptic devices, pictograms, animated characters and personalized synthetic voices. The platform will provide a set of services that allow easy access to social networks, friends and remote family members, fighting social-exclusion of people with special needs or impairments. Application of these features will be performed in the context of serious games, virtual reality environments and assisted living scenarios. Biometrics will complement the platform, in the sense that authentication and authorization are fundamental aspects for assuring access security to personal information in a natural way.

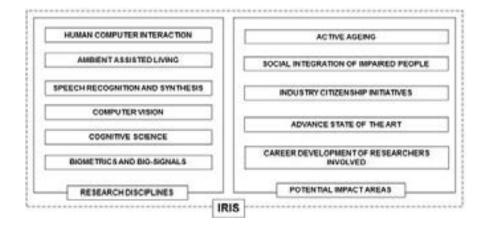
This goal will be accomplished through multiple Transfer of Knowledge mechanisms between Industry and Academia that include secondments, recruitments, seminars, workshops and short courses given by specialized researchers about a diverse range of topics that target both project objectives and career development. The project consortium composed by 5 partners (2 Industry and 3 Academic partners) will also organize a relevant number of outreach activities directed at the general public and events, paving the way for strong and durable repercussions in the scientific, technological, social and economic domains of our society.

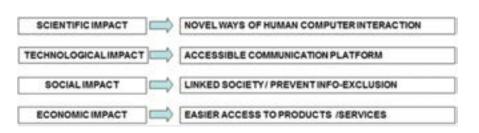
SECTOR

ICT

WONDERTALENT LDA – Portugal
UNIVERSIDAD DE ZARAGOZA – Spain
UNIVERSIDADE DE AVEIRO – Portugal
MIDDLE EAST TECHNICAL UNIVERSITY Turkey









KnowHow

Knowledge Production, Communication and Negotiation for Coastal Governance Under Climate Change

INFORMATION

Contract Number

612615

Theme

People

Instrument

MC-IRSES

Total Cost

281.400 €

EC Contribution

281.400 €

Coordinator EC Contribution

65.100 €

Project Start Date

02-Jan-14

Scientific Coordinator

Sérgio Rosendo (sergiorosendo@fcsh.unl.pt)

UNIV. NOVA DE LISBOA
FACULDADE DE CIÊNCIAS
SOCIAIS E HUMANAS
DEP. DE GEOGRAFIA E
PLANEAMENTO REGIONAL
Avenida de Berna 26C
1069-061 LISBOA

Duration

36 Months

Project Website http://cordis.europa.eu/projects/r cn/109757_en.html

ABSTRACT (Project Objectives & Description of Work)

KnowHow promotes research staff exchanges between institutions in Europe and South Africa. The project aims to improve the capacities of participant institutions and researchers in producing, translating and effectively delivering scientific knowledge to decision makers, with an emphasis on local governments in the coastal zones as key actors in adaptation to climate change. Its specific objectives are to:

- Promote exchange of expertise and experiences between partners in modes of research oriented towards the needs of decision makers in the domain of environmental governance;
- Develop and test a methodological approach to assess the needs of local governments for knowledge on coastal adaptation to climate change;
- Improve the existing capacity of partners to define conncepts and communicate research and research uncertainties in ways that enhance its usability, comprehension and impact;
- Develop a joint stakeholder-oriented transdisciplinary research proposal on the governace of coastal zones in a changing climate.

SCIENTIFIC FIELD

Social Sciences, Engineering



TECHNISCHE UNIVERSITEIT DELFT – Netherlands

HELMHOLTZ-ZENTRUM GEESTHACHT ZENTRUM FUR MATERIAL- UND KUSTENFORSCHUNG GMBH – Denmark

UNIVERSITETET I BERGEN - Norway

PARTNERS FROM THIRD COUNTRIES

COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH - South Africa



MEMPEPACROSS

Membrane-Active Peptides Across Disciplines and Continents: An Integrated Approach to Find New Strategies to Fight Bacteria, Dengue Virus and Neurodegeneration

INFORMATION

Contract Number

247513

Theme

People

Instrument

MC-IRSES

Total Cost

181.800 €

EC Contribution

181.800 €

Coordinator EC Contribution

131.400 €

Project Start Date

01-Feb-10

Scientific Coordinator

Nuno Santos (nsantos@fm.ul.pt)

INST. DE MEDICINA MOLECULAR
Faculdade de Medicina da
Universidade de Lisboa
Av. Professor Egas Moniz
1649-028 LISBOA

Duration

48 Months

Project Website http://cordis.europa.eu/projects/r cn/96370_en.html

ABSTRACT (Project Objectives & Description of Work)

Peptide-lipid interactions are critical in several biomedical matters that seem uncorrelated at a first glance. MEMPEPACROSS deals with some of these:

- (i) Viral hemorrhagic fever caused by dengue virus. The interactions with lipid systems are necessary for dengue virus assembly and can be a target for its inhibition.
- (ii) Gene-encoded antimicrobial peptides (AMPs) are innate defenses to prevent colonization and infection by microbial pathogens. Their antimicrobial efficacy and the difficulty of the target organism to develop resistance make AMPs promising candidates for new generations of drugs to fight highly threatening antibiotic-resistant strains of pathogens.
- (iii) Peptide-membrane interactions are also relevant for neurodegenerative diseases, such as Alzheimer disease. The identification of the conditions necessary for the triggering of the disease-inducing protein aggregation and the search for strategies to inhibit these processes are the key-aspects to be addressed. This project pointed out to the possibility to use kyotorphin as an eventual biomarker for neurodegeneration.

This project also included a strong component of Science communication and management, including development of training activities for scientists on mass media contacts, project management and fundraising, development of Communication Programs for high school students on Scientific Society Meetings, and the development of workshops to improve the formation of school teachers, inclusively on remote locations in Brazil.

The expertise of two European institutions andthree Brazilian institutions came together with common goals and a successful concern for the: 1) improvement of the scientific state-of-the-art, 2) effective societal impact of the achievements of the project, and 3) dissemination of the project outputs among both technical and non-technical audiences.

SCIENTIFIC FIELD

Biochemistry; Molecular Biophysics; Medicinal Chemistry / Drug Design

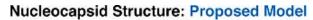
UNIVERSITAT POMPEU FABRA - Spain

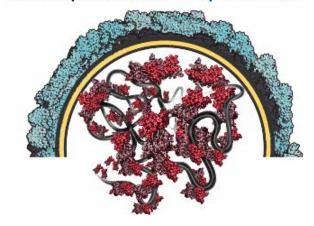
PARTNERS FROM THIRD COUNTRIES

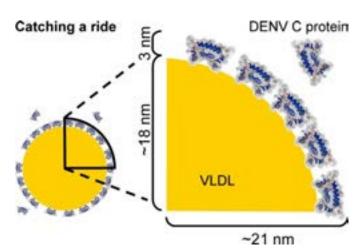
UNIVERSIDADE FEDERAL DO RIO DE JANEIRO - Brazil

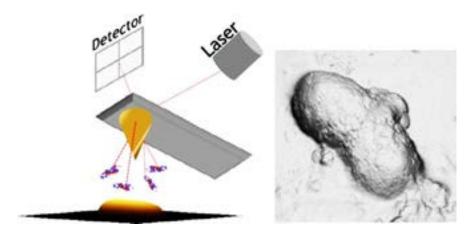
UNIVERSIDADE FEDERAL DO CEARA - Brazil

FUNDACAO OSWALDO CRUZ - Brazil











NANEL

Functional Ordered Nanomaterials via ELectrochemical Routes in Non-Aqueous Electrolytes

INFORMATION

Contract Number

295273

Theme

People

Instrument

MC-IRSES

Total Cost

250.800 €

EC Contribution

250.800 €

Coordinator EC Contribution

134.900 €

Project Start Date

01-Jan-12

Scientific Coordinator

Mikhail Zheludkevich (mzheludkevich@ua.pt)

UNIVERSIDADE DE AVEIRO

DEP. DE ENGENHARIA DE

MATERIAIS E CERÂMICA

Campus Universitário de Santiago

3810-193 AVEIRO

Duration

36 Months

Project Website http://cordis.europa.eu/projects/rc n/102235_en.html

ABSTRACT (Project Objectives & Description of Work)

The NANEL exchange project aims at establishing long-lasting research cooperation between Portuguese, Bulgarian, Belgian, Belarusian and Russian scientists in the field of electrochemical synthesis of advanced nano-structured materials.

The main technical objective of the project is the development of novel functional nano-materials for sensors and solar cell applications on the basis of ordered nano-porous anodic oxides. The main scientific novelty of the project is functionalization (the addition of functional groups onto the surface of a material by chemical synthesis methods) of the porous anodic oxides, such as those based on alumina or titania, via electrochemical or electrophoretic ways using non-aqueous electrolytes.

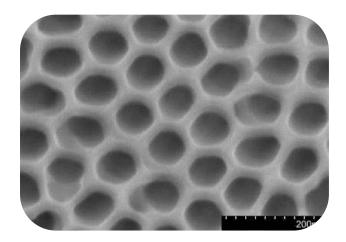
The project allowed the establishment of close links between the participating EU institutions and the scientists from non-EU countries.

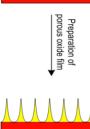
During the first part of the project, novel semiconductive and magnetic materials were developed. These materials can be used for sensor and photovoltaic applications. Anodic templates based on aluminium oxide and titanium oxide were prepared and optimized and first deposition of metals from ionic liquids was also already demonstrated.

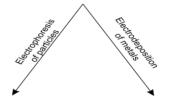
SCIENTIFIC FIELD

Materials Science

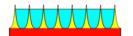
925nm 430nm











PARTNERS

UNIVERSITY OF CHEMICAL TECHNOLOGY AND METALLURGY - Bulgaria VRIJE UNIVERSITEIT BRUSSEL – Belgium

PARTNERS FROM THIRD COUNTRIES

MOSCOW INSTITUTE OF ELECTRONIC TECHNOLOGY (TECHNICAL UNIVERSITY) – Russia

SCIENTIFIC-PRACTICAL MATERIALS RESEARCH CENTRE OF THE NATIONAL ACADEMY OF SCIENCES OF BELARUS -Belarus



NANO GUARD

Fullerene-Based Systems for Oxidative Inactivation of Airborne Pathogens

INFORMATION

Contract Number

269138

Theme

People

Instrument

MC-IRSES

Total Cost

844.200 €

EC Contribution

844.200 €

Coordinator EC Contribution

347.400 €

Project Start Date

01-Oct-11

Scientific Coordinator

Fernando Santana (aljb@fct.unl.pt)

UNIV. NOVA DE LISBOA FAC. DE CIÊNCIAS E TECNOLOGIA Campus da FCT/UNL Monte de Caparica 2829-516 CAPARICA

Duration

48 Months

Project Website www.phys.umu.se/tanya/site_gua rd/nanoguard.html

ABSTRACT (Project Objectives & Description of Work)

The main goal of this project is to establish a long-lasting collaboration and create a network of the research centres of excellence from Europe and Third Countries aiming at developing Fullerene-based systems for oxidative inactivation of airborne microbial pathogens.

This goal will be achieved by undertaking joint research activities via collaboration of a multidisciplinary consortium in molecular microbiology, virology, health care, environmental physics, green chemistry and material science, facilitated by individual mobility of the researchers between Europe and Third Countries.

The main expected results of the project are:

- To produce novel fullerene based composites with optimal system design and high antimicrobial/antiviral performance under solar irradiation;
- To create a prototype system of airborne pathogens inactivation in air-conditioning installations, to be submitted to a tough testing.

The project also intends to:

- increase individual mobility and career prospects;
- facilitate knowledge transfer between research groups;
- provide training opportunities for early stage researchers;
- disseminate results of the exchange activities.

SCIENTIFIC FIELD

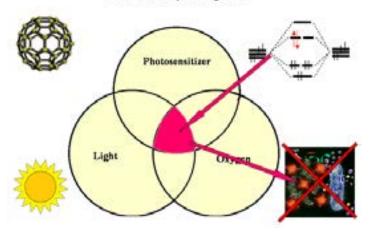
Climate Action

INSTITUTO DE SOLDADURA E QUALIDADE - Portugal

UMEA UNIVERSITET - Sweden

BEN-GURION UNIVERSITY OF THE NEGEV - Israel

Fullerene-based systems for oxidative inactivation of airborne pathogens



PARTNERS FROM THIRD COUNTRIES

RESEARCH INSTITUTE OF INFLUENZA OF RUSSIAN ACADEMY OF MEDICAL SCIENCE – Russia

DONETSK INSTITUTE OF PHYSICS & ENGINEERING NAMED AFTER O.O. GALKIN, NATIONAL ACADEMY OF SCIENCES OF UKRAINE - Ukraine

UNIVERSIDADE FEDERAL DO RIO DE JANEIRO - Brazil





INFORMATION

Contract Number

295145

Theme

People

Instrument

MC-IRSES

Total Cost

138.100 €

EC Contribution

138.100 €

Coordinator EC Contribution

77.000 €

Project Start Date

01-May-12

Scientific Coordinator

Mário Ferreira (mgferreira@ua.pt)

UNIVERSIDADE DE AVEIRO

DEP. DE ENGENHARIA DE

MATERIAIS E CERÂMICA

Campus Universitário de Santiago

3810-193 AVEIRO

Duration

24 Months

Project Website http://cordis.europa.eu/projects/r cn/103690_en.html

ABSTRACT (Project Objectives & Description of Work)

NANOMAR project aims at establishing long-lasting scientific collaboration network between European research institutions and scientists from two BRIC countries, Brasil and the Russian Federation. The collaboration will be established on the basis of synergistic combination of the complementary expertises targeting the development of novel smart sustainable materials for offshore applications. The collaborative network joins together groups working on development of new functional nanocontainers, novel protective coatings as well as teams holding recognised expertise on the characterization of the anticorrosion coatings.

The main scientific objective of the proposal is the development of a new generation of smart bifunctional coatings that combine the self-healing anticorrosion ability with antifouling properties for offshore applications such as oil-mining platforms and windmill farms. The main scientific approach behind this project is the controlled release of the active species (corrosion inhibitor and biocide agent, respectively) from nanostructured receptacles (nanocontainers) in damaged zones of the coating.

There will be an extensive exchange of knowledge and expertise for the benefit of all participants.

SCIENTIFIC FIELD

Nanomaterials

MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN E.V. – Germany

PARTNERS FROM THIRD COUNTRIES

A.V. SHUBNIKOV INSTITUTE OF CRYSTALLOGRAPHY RUSSIAN ACADEMY OF SCIENCES - Russia

INSTITUTO DE PESQUISAS TECNOLOGICAS DO ESTADO DE SAO PAULO SA - Brazil



NANOMOTION

Nanoelectromechanical Motion in Functional Materials

INFORMATION

Contract Number

290158

Theme

People

Instrument

MC-ITN

Total Cost

3.350.360 €

EC Contribution

3.350.360 €

Coordinator EC Contribution

688.754 €

Project Start Date

01-Nov-11

Scientific Coordinator

Andrei Kholkin (kholkin@ua.pt)

UNIVERSIDADE DE AVEIRO
DEP. DE ENGENHARIA DE
MATERIAIS E CERÂMICA &
CICECO - CENTRO DE
INVESTIGAÇÃO EM
MATERIAIS CERÂMICOS
E COMPÓSITOS
Campus Universitário de Santiago
3810-193 AVEIRO

Duration

48 Months

Project Website
www.itn-nanomotion.eu

ABSTRACT (Project Objectives & Description of Work)

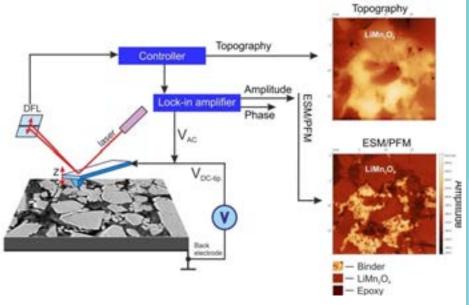
The focus of modern solid-state technology is currently shifting from applications based on a single property (e.g., electric, magnetic, and elastic) to those based on the coupling of different fields where a coupled materials response can be either used for characterization or as a basis for novel applications. In the last few years, it has become clear that the coupled electromechanical response of materials (i.e., mechanical deformation under applied electric bias) can be used not only as an universal tool for studying diverse materials classes at the nanoscale but is also becoming indispensable for the development of the next generation of multifunctional materials (piezoelectrics, ferroelectrics, multiferroics, ionic conductors, and polar biomaterials) and composites. Novel nanoelectromechanical tools (Piezoresponse Force Microscopy - PFM, Electrochemical Strain Microscopy - ESM, and as well their combination with traditional Scanning Probe Microscopies - SPM) have been introduced for studying emergent materials and applications. This has recently led to a substantial progress in the development of novel multiferroics, photovoltaics, biopiezoelectrics, and battery materials. The emergent field of nanoelectromechanics requires coordinated action at the European level as further progress in this field largely relies on the education and dissemination of best practices in application of PFM/ESM to a large number of functional materials. NANOMOTION is intended to train the next generation of engineers and technologists in the fundamental aspects of the nanoelectromechanics, to apply advanced PFM/ESM tools to study a wide range of functional materials in collaboration with interested industrial partners, and to create an European-based pool of researchers in this area.

SCIENTIFIC FIELD

Nanomaterials



Initial Training Network NANOElectromechanical MOTION in Functional Materials



UNIVERSITAET DUISBURG-ESSEN - Germany

UNIVERSITY OF LEEDS - United Kingdom

UNIVERSITY COLLEGE DUBLIN, NATIONAL UNIVERSITY OF IRELAND — Ireland

ROBERT BOSCH GMBH - Germany

NPL MANAGEMENT LIMITED - United Kingdom

UNIVERSITY COLLEGE CORK, NATIONAL UNIVERSITY OF IRELAND – Ireland

NANOTEC ELECTRONICA SL - Spain



NETEP

European-Brazilian Network on Energy Planning

INFORMATION

Contract Number

612263

Theme

People

Instrument

MC-IRSES

Total Cost

218.400 €

EC Contribution

218.400 €

Coordinator EC Contribution

119.700 €

Project Start Date

02-Jan-14

Scientific Coordinator

Paula Ferreira

(paulaf@dps.uminho.pt)

UNIVERSIDADE DO MINHO DEP. DE PRODUÇÃO E SISTEMAS Largo do Paço

4704-553 BRAGA

Duration

36 Months

Project Website

http://netep.dps.uminho.pt

ABSTRACT (Project Objectives & Description of Work)

The general aim of NETEP is to create the basis for interdisciplinary research and knowledge transfer on energy planning. The proposed exchange programme envisages a significant contribution to the development of sustainable energy planning strategies that will support future decision making. NETEP brings together partners having different types of expertise in the field of energy analysis and operating in four different countries, Portugal, UK, Spain and Brazil, expressing different energetic metabolic patterns and different energy market structures. Staff exchange will enable partners to share knowledge on models and methodologies and on the possibility of implementing or adapting them to different energy systems. The knowledge generated will benefit energy decision makers and the scientific community.

The outputs will result in a relevant contribution to the general target of achieving sustainable energy societies in the future. Visits between universities' research staff are expected to create the basis for proposing joint projects and long term collaboration. The participation and training of early career researchers is a key aspect of the proposal and joint supervision of their work will be valuable means to ensure proper collaboration and knowledge transfer between the EU and Brazil.

SCIENTIFIC FIELD

Energy Planning

UNIVERSITAT AUTÒNOMA DE BARCELONA – Spain

CRANFIELD UNIVERSITY - United Kingdom

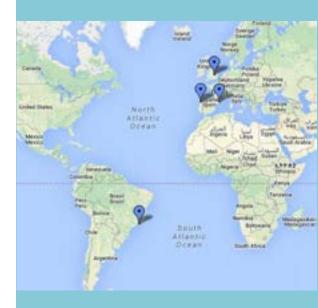
PARTNERS FROM THIRD COUNTRIES

FUNDAÇÃO COORDENAÇÃO DE PROJETOS PESQUISAS E ESTUDOS TECNOLOGICOS COPPETEC - Brazil









NRHEP

Numerical Relativity and High Energy Physics

INFORMATION

Contract Number

295189

Theme

People

Instrument

MC-IRSES

Total Cost

168.600 €

EC Contribution

159.600 €

Coordinator EC Contribution

56.700 €

Project Start Date

01-Jan-12

Scientific Coordinator

Carlos Herdeiro (herdeiro@ua.pt)

UNIVERSIDADE DE AVEIRO

DEP. DE FÍSICA

Campus de Santiago

3810-193 AVEIRO

Duration

48 Months

Project Website http://gravitation.web.ua.pt/inde x.php?q=node/163

ABSTRACT (Project Objectives & Description of Work)

The objective of this exchange programme is to promote already existing scientific synergies and create new ones between the partners, both at the level of scientific production and at the level of science related dynamics.

The partners have been pioneering, over the last two years, the new area of applying the powerful techniques of numerical relativity to high energy physics scenarios. This has been done on two main fronts:

- (i) The study of parton-parton collisions in trans-Planckian scattering scenarios, via numerical simulations of high energy black hole collisions in the framework of fully non-linear numerical relativity;
- (ii) (ii) The use of numerical relativity techniques in more general spacetimes, namely those with Anti-de-Sitter (AdS)-like boundary conditions or compact extra dimensions. This network aims at further developing this research area.

In addition to planned interchange visits, over its four year lifetime, NRHEP intends to also produce dozens of publications related to the network goals, as well as to organize several international meetings..

SCIENTIFIC FIELD

Physics

nr/hep

PARTNERS

INSTITUTO SUPERIOR TÉCNICO - Portugal AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS - Spain UNIVERSITÀ DEGLI STUDI DI ROMA LA SAPIENZA – Italy

PARTNERS FROM THIRD COUNTRIES

UNIVERSITY OF MISSISSIPPI - United States

UNIVERSIDADE FEDERAL DO PARÁ - Brazil



INFORMATION

Contract Number

230855

Theme

People

Instrument

MC-IRSES

Total Cost

187.200 €

EC Contribution

187.200 €

Coordinator EC Contribution

187.200 €

Project Start Date

01-Feb-09

Scientific Coordinator

Sérgio Jesus (sjesus@ualg.pt)

CINTAL
CENTRO DE INVESTIGAÇÃO
TECNOLÓGICA DO ALGARVE
Quinta da Penha
8005-139 FARO

Duration

42 Months

Project Website www.siplab.fct.ualg.pt/proj/oaex. shtml

ABSTRACT (Project Objectives & Description of Work)

The OAEx joint research programme aims at developing synergies and reinforcing collaboration between the EU, Brazil and Canada in the field of ocean acoustic monitoring and marine technologies.

In the exchange of experiences on the use of ocean acoustics for geophysical exploration, ocean circulation monitoring and underwater acoustic communications, European and Canadian groups have developed techniques on ocean environmental monitoring by acoustic sensing and/or using underwater acoustic communications that could be integrated and applied to monitor the challenging and strategic site of Cabo Frio in Brazil, that has studied for a long time by the Brazilian partners using conventional oceanographic tools. In turn, the Brazilian partners will profit from the programme by acquiring expertise in a prospective field that they are just starting. Moreover, the Canadian partner has privileged access to the NEPTUNE observatory, at the moment an unique cabled long term multidisciplinary ocean observation laboratory operating in the global ocean.

In order to achieve the proposed goals, the main events within OAEx are workshops, a sea trial and data analysis. The exchange will encompass both scientific and technical personnel with experience at sea as well as advanced methodologies for data analysis.

SCIENTIFIC FIELD

Ocean exploration

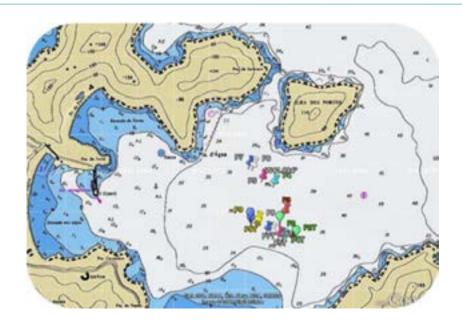
This project involves a single participant

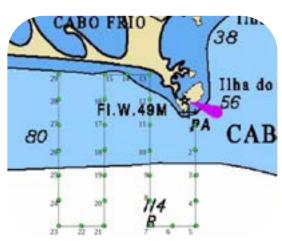
PARTNERS FROM THIRD COUNTRIES

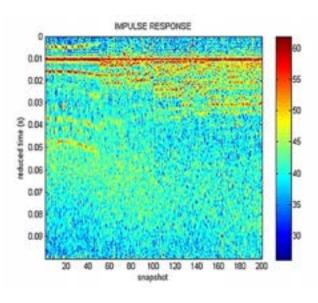
Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia-Brazil

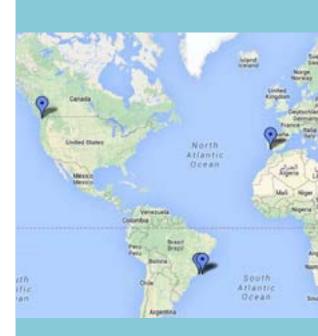
Instituto de Estudos do Mar Almirante Paulo Moreira - Brazil

University of Victoria- Canada









INFORMATION

Contract Number

607656

Theme

People

Instrument

MC-ITN

Total Cost

3.420.099 €

EC Contribution

3.420.099 €

Coordinator EC Contribution

729.773 €

Project Start Date

01-Sep-13

Scientific Coordinator

José Cândido

(jose@wavec.org)

WAVEC

OFFSHORE RENEWABLE

R. D. Jerónimo Osório 11 1º

1400-119 LISBOA

Duration

48 Months

Project Website

www.oceanet-itn.eu

ABSTRACT (Project Objectives & Description of Work)

OceaNET cocusses on floating offshore wind and wave energy. It aims at contributing to develop specific technologies and enabling technologies common to both energy sources. The research activities are structured around a few topics that will provide the opportunity for a set of young researchers to be trained in first class European Research & Development (R&D) institutes, universities and companies active in these areas. This hands-on training will be complemented with a number of short courses on enabling technologies, relevant for farm development, and on associated economic, environmental and societal issues required for their future integration in the market. The training programme will be complemented by secondments to selected industrial companies.

OceaNET will be developed in close collaboration with EIT's KIC InnoEnergy OTS (Offshore Test Station) project. OTS concerns the development of four innovative products for offshore wind and wave energy farms, namely an environmental monitoring hardware and software package, underwater electrical connectors and associated ROVs (Remote Operated Vehicles), air turbine for oscillating water column (OWC) wave energy converters and an Operations and Mantenance (O&M) support software package.

SCIENTIFIC FIELD

Ocean Energy.



INSTITUTO SUPERIOR TÉCNICO – Portugal

UPPSALA UNIVERSITET - Sweden

FRAUNHOFER-GESELLSCHAFT ZUR
FOERDERUNG DER ANGEWANDTEN
FORSCHUNG E.V – Germany

STICHTING MARITIEM RESEARCH
INSTITUUT NEDERLAND - Netherlands

UNIVERSIDAD DE CANTABRIA – Spain

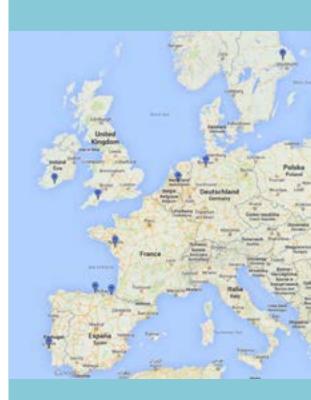
ECOLE CENTRALE DE NANTES – France

THE UNIVERSITY OF EXETER - United

Kingdom

FUNDACION TECNALIA RESEARCH &
INNOVATION – Spain

UNIVERSITY COLLEGE CORK, NATIONAL
UNIVERSITY OF IRELAND - Ireland



PEP2BRAIN

Selected Peptides as Drug Candidates Directed to Pain and Neurodegeneration

INFORMATION

Contract Number

230654

Theme

People

Instrument

MC-IAPP

Total Cost

659.895 €

EC Contribution

659.895 €

Coordinator EC Contribution

248.037 €

Project Start Date

01-Mar-09

Scientific Coordinator

Miguel Castanho (macastanho@fm.ul.pt)

INST. DE MEDICINA MOLECULAR
Faculdade de Medicina da
Universidade de Lisboa
Av. Professor Egas Moniz
1649-028 LISBOA

Duration

48 Months

Project Website http://dor.biochemistryimm.org/cat.php?catid=24

ABSTRACT (Project Objectives & Description of Work)

The PEP2BRAIN project started with BLV200703/4 (amidated Kyotorphin), a small molecule discovered jointly by groups from the University of Lisbon (Portugal) and Girona (Spain) that proved its efficacy in analgesia from behavioural tests in rats. The preliminary results regarding efficacy and toxicology of the molecule were very encouraging. However, a previous phase of lead optimisation was needed making use of medicinal chemistry methodologies combined with robust in vitro and in vivo assays, in order to achieve the best pharmacological and ADME/toxicity characteristics for the lead molecule. This required technology, knowledge and innovation transfer with other academic and industrial partners. Bioalvo, a Portuguese Biotech company, Synovo, a German company expert in ADME/tox tests, and the University of Tuebingen, with an expert group in Medicinal Chemistry, joined the initial partners.

There were five inter-sectorial secondments during the project, four of them international: one academic researcher spent six months working abroad for a company and four biotech researchers of a company spent six months-periods in academia, three of them abroad. IMM also recruited three researchers.

The consortium produced three drug leads with high analgesic power derived from BLV200704, namely methyl derivatives, optical isomers, and a ibuprofen-kyotorphin tandem drug that meet all the criteria of drug developability in terms of efficacy and safety. The exact mechanism of action is under study and industrial development is being pursued.

SECTOR

Health

BIOALVO, S.A. - Portugal
UNIVERSITAT DE GIRONA - Spain
SYNOVO GMBH - Germany
EBERHARD KARLS UNIVERSITAET
TUEBINGEN - Germany







RADIO-PAST

Radiography of the Past. Integrated Non-Destructive Approaches to Understand and Valorise Complex Archaeological Sites

INFORMATION

Contract Number

230679

Theme

People

Instrument

MC-IAPP

Total Cost

760.440 €

EC Contribution

760.440 €

Coordinator EC Contribution

256.777 €

Project Start Date

01-Apr-09

Scientific Coordinator

Cristina Corsi

(cricorsi@uevora.pt)

UNIVERSIDADE DE ÉVORA CENTRO INTERDISCIPLINAR DE HISTÓRIA, CULTURAS E SOCIEDADES Largo dos Colegiais 2 7000-803 ÉVORA

Duration

48 Months

Project Website www.radiopast.eu

ABSTRACT (Project Objectives & Description of Work)

During the last 20 years, a set of methods for surface survey and non-invasive sub-surface prospections to investigate complex buried archaeological sites have been developed, aiming to limit destructive intervention, such as excavation. This set includes different kinds of remote sensing, ground based geophysics, systematic recording of surface materials, GIS-based analysis and visualisation tools, geomatic and geomorphological survey. These technologies require high investments in instrumentation, long formation of researchers, time consuming data processing and permits for fieldwork on cultural heritage sites.

This project aims to join resources and very different skills to tackle each possible aspect connected with non-destructive approaches to complex archaeological sites, from fieldwork, where new geophysics techniques can be tested, to data collection, with innovative trials to automation of the data acquisition process, data processing and interpretation, as well as visualisation of results, where a 3D vision of sub-surface evidence could achieve a science-based but still effective presentation.

The consortium of 7 partners will organize the mutual exchange of researchers and specialists and will recruit new researchers for transfer of knowledge. Thus, an open laboratory with all the necessary expertise can be established, offering the capabilty to perform, analysis and technical activities, to test new experimental and data processing techniques, as well as offering advanced training activities.

SCIENTIFIC FIELD

Archeology



UNIVERSITEIT GENT – Belgium

UNIVERZA V LJUBLJANI - Slovenia

THE BRITISH SCHOOL AT ROME – Italy

PAST2PRESENT BV – Netherlands

GUENTHER WEINLINGER – Austria

EASTERN ATLAS GMBH & CO KG - Germany







RNA REGULOMICS The Role of Non-Coding RNA in Human Health and Disease

INFORMATION

Contract Number

318981

Theme

People

Instrument

MC-IRSES

Total Cost

155.400 €

EC Contribution

155.400 €

Coordinator EC Contribution

67.200 €

Project Start Date

01-Oct-12

Scientific Coordinator

Maria Carmo Fonseca (carmo.fonseca@fm.ul.pt)

INST. DE MEDICINA MOLECULAR Faculdade de Medicina da Universidade de Lisboa Av. Professor Egas Moniz 1649-028 LISBOA

Duration

48 Months

Project Website http://cordis.europa.eu/projects/r cn/104949 en.html

ABSTRACT (Project Objectives & Description of Work)

RNA molecules have been already proven to be a key target for disease therapy as well as a tool for the development of new drugs. Since the discovery of small non coding RNA (ncRNA) and all the associated phenomena like RNA interference, the possibility of using RNA-based drugs has become a subject of great interest in the pharmaceutical and clinical fields. ncRNA is at the core of many cellular processes and might become an outstanding landmark in the way how we will fight disease in the future.

The objective of this exchange programme is to establish collaborative training and joint research initiatives addressing the role of non-coding RNAs in health and disease. The specific scientific aims are:

- To unravel the role of non-coding RNA and RNA-binding proteins in thyroid development, physiology and pathology;
- To determine whether thyroid hormones affect non-coding RNAs in osteoblasts derived from adipose stem cells;
- To determine whether circulating micro RNAs can be used as biomarkers for heart disease.

The programme proposed is expected to significantly expand biomedical research and training across the Brazilian academic community, while providing the European partner institutions expanded opportunities for collaborations in research and post-graduate education.

SCIENTIFIC FIELD

Human health

UNIVERSITÀ DEGLI STUDI DI NAPOLI FEDERICO II - Italy BIOGEM SCARL – Italy

PARTNERS FROM THIRD COUNTRIES

UNIVERSIDADE ESTADUAL PAULISTA - Brazil



INFORMATION

Contract Number

230843

Theme

People

Instrument

MC-IRSES

Total Cost

43.200 €

EC Contribution

43.200 €

Coordinator EC Contribution

43.200 €

Project Start Date

01-Feb-09

Scientific Coordinator

Nanda Kumar

(nanda@astro.up.pt)

CENTRO DE INVESTIGAÇÃO EM ASTRONOMIA E ASTROFÍSICA DA UNIVERSIDADE DO PORTO Rua das Estrelas 4150-762 PORTO

Duration

45 Months

Project Website http://cordis.europa.eu/projects/ 230843

ABSTRACT (Project Objectives & Description of Work)

The SF-WF-MSF project aimed to combine several multi-wavelength observations to investigate the structure, evolution and dynamics of young stellar populations in molecular clouds and embedded clusters and study the initial mass function, feedback mechanisms from outflows and winds from massive stars. The results can be used to test theoretical scenarios of star formation. The same datasets will also be used to address a second objective to investigate the formation of massive stars within these molecular clouds.

The consortium members involved in the EU and in India have individually and, to some extent, in collaboration, pursued several aspects of the above research. The magnitude of available and to-be available data is enormous and efficient exploitation of these data for science investigation requires multiple groups working on various aspects of the science. This project aims to combine the expertise and efforts of three groups to obtain maximum output from the wide-field surveys of star forming regions. The specific objectives are:

- a) to exploit the wide-field infrared surveys (UKIDSS, VISTA, UWISH2) to address problems in star formation, with focus on molecular clouds, massive stars and triggered star formation;
- b) to train early-stage researchers in the multi-wavelength analysis, with focus on wide-field infrared data;
- c) to strengthen the cooperation with the Indian scientifiic community and to use the important Indian radio astronomical facility, the 'Giant metre wave radio telescope'.

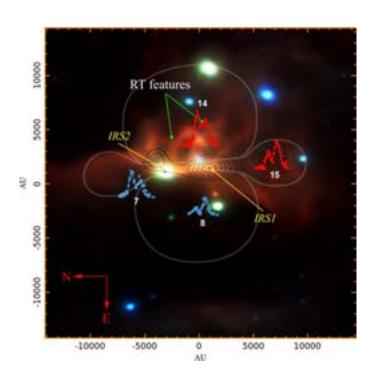
SCIENTIFIC FIELD

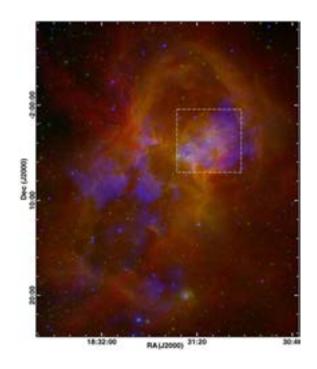
Astronomy

This project involves a single participant

PARTNERS FROM THIRD COUNTRIES

TATA INSTITUTE OF FUNDAMENTAL RESEARCH- India







INFORMATION

Contract Number

269282

Theme

People

Instrument

MC-IRSES

Total Cost

238.800 €

EC Contribution

238.800 €

Coordinator EC Contribution

111.600 €

Project Start Date

01-Dez-11

Scientific Coordinator

Sviatlana Lamaka (sviatlana.lamaka@ist.utl.pt)

UNIV. TÉNCINA DE LISBOA INST. SUPERIOR TÉCNICO DEP. DE ENGENHARIA QUÍMICA E BIOLÓGICA Avenida Rovisco Pais 1 1049-001 LISBOA

Duration

24 Months

Project Website http://cordis.europa.eu/projects/r cn/98127_en.html

ABSTRACT (Project Objectives & Description of Work)

The SISET joint exchange programme aims to establish long-term research cooperation between Portuguese, Belgian, Belarusian and Chinese scientists in the field of instrumental techniques for corrosion science. Collaboration brings together the experts from conventional and localized electro analytical techniques, electro chemical modelling, corrosion science and protective coatings in order to develop new experimental protocols for studying corrosion and healing processes on a micro scale.

The work programme intends to synergistically unite the existing localized electro analytical techniques via realization of new ideas allowing their simultaneous use. Combination of two or even three localized techniques dramatically increases the value of data acquired by each of them since all numerical parameters are collected without considerable time lag and therefore can be unconditionally used as the input parameters for modelling and simulation. To achieve the goals, complementary combination of the existing expertise and groundwork is needed. Mutually beneficial transfer of knowledge will be implemented through an intensive exchange program between five partner organizations.

SCIENTIFIC FIELD

Materials (Chemistry)

UNIVERSIDADE DE AVEIRO - Portugal VRIJE UNIVERSITEIT BRUSSEL — Belgium

PARTNERS FROM THIRD COUNTRIES

BELARUSIAN STATE UNIVERSITY- Belarus
INSTITUTE OF METAL RESEARCH, CHINESE
ACADEMY OF SCIENCES - China



INFORMATION

Contract Number

285870

Theme

People

Instrument

MC-IAPP

Total Cost

1.039.198 €

EC Contribution

1.039.198 €

Coordinator EC Contribution

230.029 €

Project Start Date

01-Nov-11

Scientific Coordinator

Jorge Dias

(jorge@deec.uc.pt)

UNIVERSIDADE DE COIMBRA
FAC. DE CIÊNCIAS E TECNOLOGIA
DEP. DE ENG. ELECTROTÉCNICA
E DE COMPUTADORES
R. SÍlvio Lima, Pólo II
3030-790 COIMBRA

Duration

48 Months

Project Website http://ap.isr.uc.pt/projects/social robot/

ABSTRACT (Project Objectives & Description of Work)

The main goal of this project is to provide an answer to the demographic change challenge through knowledge transfer and the creation of strategic synergies between the academia and industry participants regarding the development of an integrated Social Robotics system (SocialRobot) for Ageing Well.

The work focuses on bringing together the Robotic and Computer Science fields by integrating state of the art Robotic and Virtual Social Care Communities technologies and services to provide solutions to key issues of relevance for improved independent living and quality of life of elderly people and efficiency of care.

The SocialRobot development will be based on a human centred approach in which the elderly individual needs and requirements are met. The project will give the opportunity to participating SMEs with excellent credit in their domain and peripheral European regions to reach excellence and compete with innovative products in the elderly care market, at European and International level.

SCIENTIFIC FIELD

Robotics

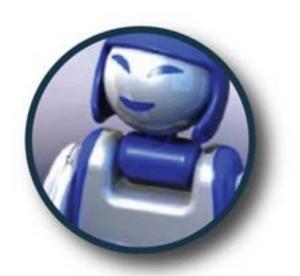
UNIVERSITY OF CYPRUS - Cyprus

CITARD SERVICES LTD - Cyprus

IDMIND - ENGENHARIA DE SISTEMAS LDA Portugal









SPINOGRAPH

Spintronics in Graphene

INFORMATION

Contract Number

607904

Theme

People

Instrument

MC-ITN

Total Cost

3.783.986 €

EC Contribution

3.783.986 €

Coordinator EC Contribution

767.576 €

Project Start Date

01-Sep-13

Scientific Coordinator

Joaquin Rossier

(joaquin.fernandez-rossier@inl.int)

LABORATÓRIO IBÉRICO INTERNACIONAL DE NANOTECNOLOGIA Av. Mestre José Veiga 4715-330 BRAGA

Duration

48 Months

Project Website www.spinograph.org

ABSTRACT (Project Objectives & Description of Work)

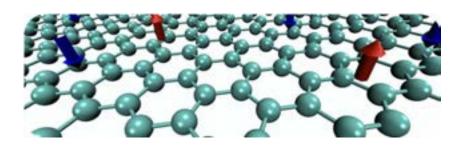
The Spintronics in Graphene Training project (SPINOGRAPH) will create a European network of experts providing state-of-the-art training for early stage researchers (ESR) and Experienced Researchers (ER) in the blooming field of Spintronics in Graphene. The huge success of spintronics in metals which, starting from the pioneering discovery of Giant Magnetoresistance (GMR), has revolutionized the magnetoelectronics industry, and the remarkable progress in the fabrication of graphene devices, have naturally led to the exploration of spintronic devices based on graphene.

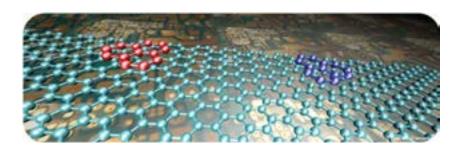
The primary objective of this network is to significantly enhance the employment prospects of E(S)Rs by: (i) choosing a scientific subject that has both a solid ground and an enormous scientific and industrial potential; (ii) engaging E(S)R in research projects in world-leading laboratories, including those of 2 Nobel laureates and in collaboration with small and medium enterprises in the emerging industry of graphene; (iii) ensuring that all researchers receive scientific and complementary skills training that is critical both to academia and industry.

SCIENTIFIC FIELD

Physics (Graphene)







CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE – France

THE UNIVERSITY OF MANCHESTER - United Kingdom

AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS – Spain

ASOCIACION - CENTRO DE INVESTIGACIÓN COOPERATIVA EN NANOCIENCIAS - CIC NANOGUNE – Spain

GESELLSCHAFT FUR ANGEWANDTE MIKRO UND OPTOELEKTRONIK MIT BESCHRANKTERHAFTUNG AMO GMBH – Germany

RHEINISCH-WESTFAELISCHE TECHNISCHE HOCHSCHULE AACHEN – Germany

RIJKSUNIVERSITEIT GRONINGEN – Netherlands

GRAPHENEA S.A. - Spain



SYMBIOCORE

Synergies through Merging Biological and Biogeochemical Expertise in Coral Research

INFORMATION

Contract Number

295191

Theme

People

Instrument

MC-IRSES

Total Cost

308.700 €

EC Contribution

281.400 €

Coordinator EC Contribution

105.000 €

Project Start Date

01-Jan-12

Contact

João Serôdio

(jserodio@ua.pt)

UNIVERSIDADE DE AVEIRO
DEP. DE BIOLOGIA
Campus de Santiago
3810-193 AVEIRO

Duration

36 Months

Project Website http://cordis.europa.eu/projects/r cn/102296_en.html

ABSTRACT (Project Objectives & Description of Work)

The SymbioCoRe project aims to strengthen existing and establishing new collaborative multidisciplinary connections between scientists from European (Portugal, U.K. and Germany) and non-European (Brazil, USA, Australia) institutions to promote the exchange of knowledge and expertise in the field of coral research. The partners are at the forefront of coral research in their respective areas, from coral photobiology, photosynthesis regulation, the metabolism of the coral symbiosis and genomics approaches over photoacclimation patterns and coral bleaching to coral ecophysiology and biogeochemical processes.

The project has allowed for a large number of exchanges of researchers among all participating institutions. These exchanges ranged from laboratory stays to visits to field stations, and they allowed, in particular:

- development of molecular biology techniques to study basic aspects of the coral symbionts life cycle and assess the role of bleaching;
- pilot expeditions to a sampling field site in the Abrolhos Archipelago, and other strategic locations along the East coast of Brazil, as well as stays at a field station in the Great Barrier Reef, Australia
- organization of scientific workshops on various aspects of coral research, held at the James Cook University, Australia, and at the University of Delaware, USA

SCIENTIFIC FIELD

Coral ecology and diversity and function of the coral-zooxanthellae symbiosis.

UNIVERSITY OF ESSEX - United Kingdom LEIBNIZ-ZENTRUM FUER MARINE TROPENOEKOLOGIE (ZMT) GMBH - Germany

PARTNERS FROM THIRD COUNTRIES

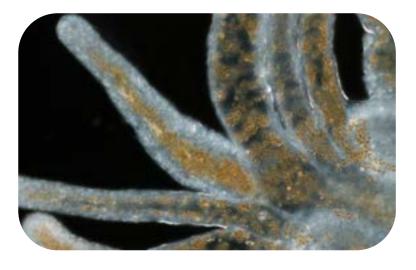
UNIVERSITY OF DELAWARE - United States

JAMES COOK UNIVERSITY - Australia

UNIVERSIDADE FEDERAL DA BAHIA - Brazil









UNIFY

Unification of Fundamental Forces and Applications

INFORMATION

Contract Number

269217

Theme

People

Instrument

MC-IRSES

Total Cost

672.000 €

EC Contribution

403.200 €

Coordinator EC Contribution

100.800 €

Project Start Date

01-Jun-11

Scientific Coordinator

Miguel Costa

(miguelc@fc.up.pt)

UNIVERSIDADE DO PORTO FACULDADE DE CIÊNCIAS DEP. FÍSICA E ASTRONOMIA Rua Campo Alegre 687 4169-007 PORTO

Duration

48 Months

Project Website http://cordis.europa.eu/projects/r cn/99291_en.html

ABSTRACT (Project Objectives & Description of Work)

The UNIFY exchange programme has two main scientific objectives:

- The first is to gain new insights on the quantum mechanical description of the gravitational interaction, an outstanding fundamental problem in theoretical physics. It is of crucial importance to our understanding of the Universe and of the forces between its basic constituents.
- The second main objective is to explore recent developments in String Theory and Quantum Gravity in the fields of Cosmology, Black Hole Physics and Gauge Theory.

UNIFY will achieve its goals by setting a challenging exchange programme that involves world leading institutions in Europe, North America and Japan. UNIFY institutions will organize a number of thematic work programmes to push our present knowledge of the law's of nature to its very limit.

SCIENTIFIC FIELD

Quantum Physics

HUMBOLDT-UNIVERSITAT ZU BERLIN -Germany

COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES - France

PARTNERS FROM THIRD COUNTRIES

PERIMETER INSTITUTE FOR THEORETICAL PHYSICS – Canada

C.N. YANG INSITITUTE FOR THEORETICAL PHYSICS - United States

INSTITUTE FOR THE PHYSICS AND MATHEMATICS OF THE UNIVERSE, UNIVERSITY OF TOKYO - Japan



WAVETRAIN 2

Initial Training Network for Wave Energy Research Professionals

INFORMATION

Contract Number

215414

Theme

People

Instrument

MC-ITN

Total Cost

3.579.635 €

EC Contribution

3.579.635 €

Coordinator EC Contribution

433.266 €

Project Start Date

01-Oct-08

Scientific Coordinator

António Sarmento (frank@wave-energy-centre.org)

WAVEC
OFFSHORE RENEWABLE
R. D. Jerónimo Osório 11 1º
1400-119 LISBOA

Duration

45 Months

Project Website http://cordis.europa.eu/projects/r cn/88284_en.html

ABSTRACT (Project Objectives & Description of Work)

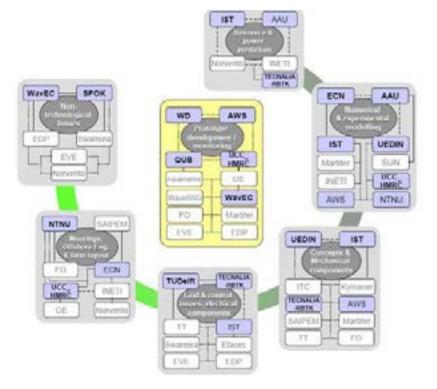
The proposed action builds strongly up on the logics of its predecessor network with the same name. The overall objective is to create a pool of specialised wave energy research professionals to support an emerging industry in a field with a very strong anticipated growth and no dedicated existing training curriculum. Although most jobs can be done by simply being a trained engineer in one of the adjacent fields, the existence of interdisciplinary skilled researchers trained in direct connection to the technology development is vital for successful development.

In the predecessor network, almost all fellows where immediately absorbed by industrial players in the field or continued research in the host institution. The work plan for WAVETRAIN 2 fellows is specifically directed towards a wide range of challenges that industrial-scale wave energy implementation faces in the present situation, with some bias towards technical issues, from hydrodynamic and PTO (Power-Take-Off) design, to instrumentation issues, energy storage and cost reduction, factors that are critical for successful deployment.

SCIENTIFIC FIELD

Wave Energy

wavetrain2



PARTNERS

INSTITUTO SUPERIOR TÉCNICO - Portugal

THE QUEEN'S UNIVERSITY OF BELFAST - United Kingdom

THE UNIVERSITY OF EDINBURGH - United Kingdom

WAVE DRAGON LTD - United Kingdom

AALBORG UNIVERSITET - Denmark

SPOK APS - Denmark

TECHNISCHE UNIVERSITEIT DELFT – Netherlands

AWS OCEAN ENERGY LTD - United Kingdom

ECOLE CENTRALE DE NANTES - France

UNIVERSITY COLLEGE CORK, NATIONAL UNIVERSITY OF IRELAND – Ireland

NORGES TEKNISK-NATURVITENSKAPELIGE UNIVERSITET NTNU – Norway

FUNDACION TECNALIA RESEARCH & INNOVATION - Spain





RESEARCH FOR THE BENEFIT OF SMES

AgriSENSact

A New Generation of Wireless Sensors for Integrated Precise Agriculture

INFORMATION

Contract Number

606575

Theme

SME

Instrument

BSG-SME

Total Cost

1.323.232 €

EC Contribution

1.012.701 €

Coordinator EC Contribution

200.837 €

Project Start Date

01-Feb-14

Scientific Coordinator

Rui Curado

(r.curado@cadflow.pt)

GRANDESIGN – DESIGN NA INDÚSTRIA, LDA. Estrada de Leiria 210 2431-967 MARINHA GRANDE

Duration

24 Months

Project Website not yet available

ABSTRACT (Project Objectives & Description of Work)

The ever growing demand for more agricultural products forced farmers to adopt resource-intensive and unsustainable practices which increased economic and environmental costs. Precision agriculture (PA), one of the most significant advances in agriculture since the advent of mechanization, allows taking into account the spatial and temporal needs of soil and crop to maximize production and profitability while minimizing risk. Wireless sensors networks (WSNs) have recently emerged as one of the key technologies to implement precision agriculture and have already been applied to precision irrigation, the application of water to a given site in a volume and at a time needed for optimum crop production. However, up to now, the lack of adequate sensors for detecting the levels of soil fertilizers prevented the implementation of WSNs for site specific fertilization, the application of the right amount of fertilizers at the right time in the right place.

AgriSENSact aims to develop an integrated PA system that will allow precise management of the crops by integrating several of the main practices of PA. The proposed system is based on the AgriProbe concept, a modular device including specific modules for sensors, energy supply and communications that can be tailored for each specific agricultural application.

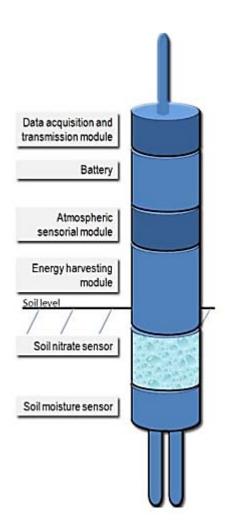
PROJECT RESULTS

Expected results are:

- new processes both for soil nitrogen sensing and energy harvesting;
- new product concepts including modular sensor probes and contact-connection systems.

These results will allow the consortium SMEs to gain a competitive edge in their respective markets and to expand/consolidate their core businesses.





ISA - INTELLIGENT SENSING ANYWHERE S.A. - Portugal

ENVIX SRO - Czech Republic

WAYDIP ENERGIA E AMBIENTE LDA - Portugal

BODEGA MATARROMERA SL - Spain

INSTITUTO PEDRO NUNES, ASSOCIAÇÃO PARA A INOVAÇÃO E DESENVOLVIMENTO EM CIÊNCIA E TECNOLOGIA - Portugal

KUNGLIGA TEKNISKA HOEGSKOLAN – Sweden

Agrobiofilm

Development of Enhanced Biodegradable Films for Aricultural Activities

INFORMATION

Contract Number

262257

Theme

SME

Instrument

BSG-SME

Total Cost

1.365.441 €

EC Contribution

1.011.652€

Coordinator EC Contribution

594.602€

Project Start Date

01-Apr-10

Scientific Coordinator

Carlos Rodrigues (crodrigues@silvex.pt)

SILVEX, INDÚSTRIA DE PLÁSTICOS E PAPEIS, S.A. Quinta da Brasileira, Lote 10 2130-999 BENAVENTE

Duration

36Months

Project Website www.agrobiofilm.eu

ABSTRACT (Project Objectives & Description of Work)

Agrobiofilm's mission focuses on developing an innovative third generation mulch film from biodegradable raw materials, subject to complete biodegradation when in contact with microorganisms found in the environment (mostly in the soil). These materials are specifically adapted to the various types of crops, in order to respond to environmental needs, to reduce costs and to optimize resources.

The Agrobiofilm project aimed at developing an alternative solution to traditional mulch (polyethylene), to test it on strawberry, melon and pepper cultures, and to adapt themto other similar crops. The project also wished to test the new film on vines as an innovative alternative.

PROJECT RESULTS

The main results obtained were:

- Agrobiofilm mulch produced from a new formulation of Mater-Bi®adapted for the different crops and edafo-climate conditions being studied;
- Tests with muskmelon, bell pepper and strawberry showed an increase of vegetative expression, a reduction of the incidence of pests and, at least, the same yield and fruit quality;
- In vineyard tests, Agrobiofilm mulch had a noticeable positive effect onto the vine growth, enabling the anticipation of the first harvest in one year and achieving production with significantly higher fruiting yields. In addition, root development was highly favoured;
- Recycle incorporation: sustainable and economic product without modification of mulch's mechanical characteristics.

agrobiofilm







BIOBAG INTERNATIONAL AS - Norway

ICS ENVIRONNEMENT - France

INSTITUTO SUPERIOR DE AGRONOMIA - Portugal

ASOCIACION PARA EL DESARROLLO DEL SISTEMA PRODUCTIVO VINCULADO A LA AGRICULTURA ONUBENSE - Spain

UNIVERSITE MONTPELLIER 2 SCIENCES ET TECHNIQUES - France

AARHUS UNIVERSITET - Denmark

HORTOFRUTICOLAS CAMPELOS SA - Portugal

MANDEVILLE-PEIRIERE OLIVIER - France EXPLOTACION AGRARIA GARRIDO-MORA C.B. - Spain

CORMRA

Development of Carbon Monoxide Releasing Molecules for the Treatment of Rheumatoid Arthritis

INFORMATION

Contract Number

230629

Theme

SME

Instrument

BSG-SME

Total Cost

1.424.000 €

EC Contribution

1.100.000 €

Coordinator EC Contribution

475.500 €

Project Start Date

01-Nov-09

Scientific Coordinator

Nuno Arantes Oliveira (nao@alfama.com.pt)

ALFAMA – I&D DE PRODUTOS
FARMACEUTICOS, LDA.
Av. da Republica
Quinta do Marques
Estação Agronomica Nacional
IBET/ITQB, Lab.7.14
2780-157 OEIRAS

Duration

24 Months

Project Website www.altaweb.it/cormra

ABSTRACT (Project Objectives & Description of Work)

The CORMRA project focused on the pre-clinical development of carbon monoxide-releasing molecules (CO-RMs) for the treatment of rheumatoid arthritis (RA). CORMs hold the promise of delivering CO in controlled amounts, at specific rates and in a targeted manner to inflamed tissues such as arthritic joints.

Carbon monoxide (CO) has a very powerful anti-inflammatory effect and it specifically acts upon a number of cellular and molecular mechanisms that are involved in the RA disease process. On the other hand, the administration of CO as a gas to RA patients would be impractical and not effective, especially in light of the affinity with which CO binds to haemoglobin and of the difficulties involved in repeated administration of a gaseous treatment to patients with a chronic disease.

CO-releasing molecules (CORMs) promise to harvest the therapeutic potential of CO by delivering it in a more controlled manner. In particular, Alfama's CORMs are small molecules, some of which release CO only or preferentially in chemical environments that are typical of an inflamed site. In addition, some CORMs can be administered orally, and most of them can be chemically modified to have better pharmacological properties without losing their CO releasing ability.

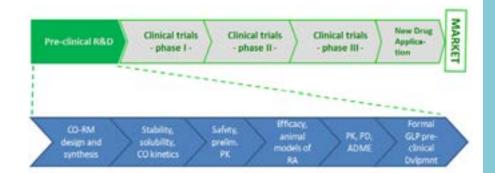
The CORMRA project aimed to test, modify and select progressively smaller sets of CORMs for the treatment of rheumatoid arthritis, using standard drug development assays as well as a number of in vitro and in vivo models of RA and of chronic inflammation.

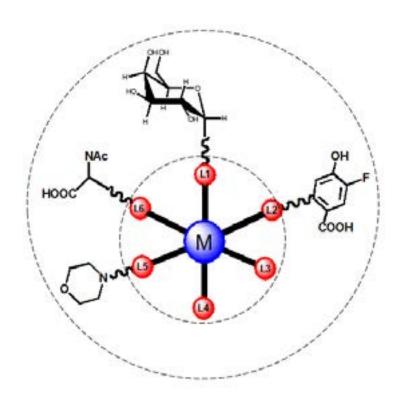
PROJECT RESULTS

The main results of this project were:

- A large number of CORMs were tested, in vitro and in vivo, for safety, toxicity and various physico-chemical parameters;
- Compounds belonging to selected classes were modified and improved for physico-chemical, ADME, and CO-releasing properties;
- A small number of exceptionally promising CO-RMs for the treatment of RA were selected.

CORMRA





FRIMORFO SA – Switzerland MICRON RESEARCH SERVICE – Italy UNIVERSITÀ DEGLI STUDI DI CATANIA – Italy

INSTITUTO DE MEDICINA MOLECULAR — Portugal

SWISS BIOQUANT AG – Switzerland ALTA RICERCA E SVILUPPO IN BIOTECNOLOGIE SRLU - Italy

GPRIX

Good Practices in Innovation Support Measures for SME: Facilitating Transition from the Traditional to the Knowledge Economy

INFORMATION

Contract Number

245459

Theme

SME

Instrument

CSA-SA

Total Cost

1.263.598 €

EC Contribution

939.539 €

Coordinator EC Contribution

248.775 €

Project Start Date

01-Dec-09

Scientific Coordinator

Pedro Soutinho (pedro.soutinho@inovamais.pt)

INOVAMAIS - SERVIÇOS DE **CONSULTADORIA EM** INOVAÇÃO TECNOLÓGICA S.A. Centro de Inovação de Matosinhos

Rua Dr. Afonso Cordeiro, 567 **4450-309 MATOSINHOS**

Duration

27 Months

Project Website www.gprix.eu

ABSTRACT (Project Objectives & Description of Work)

The GPrix project evaluated the impacts of innovation support measures in SME's from traditional sectors in 7 European regions by collecting data on the impact of public sector Innovation and R&D support programmes.

The study provided a comprehensive insight into the design and implementation of innovation policies at national and regional level targeting traditional sectors (Ceramics, Textiles, Leather, Food, Automotive and Mechanical and Metallurgy sectors) which represent the vast majority of companies in Europe and are still major sources of wealth creation and employement.

PROJECT RESULTS

The project developed an innovative methodological framework to evaluate the impact of innovation support policies based on the best practices identified. The methodology was validated through Regional Workshops participated by universities, business associations, SMEs (managers), public bodies (managers of innovation support programmes), technologic centres as well as innovation clusters including R&D centres and industrial companies.

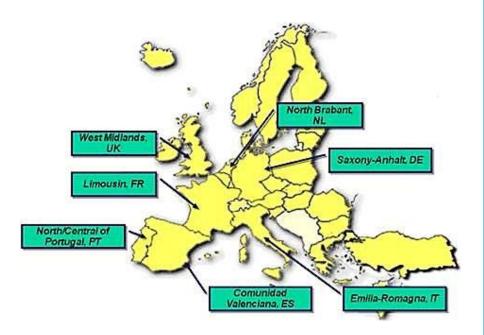
The project then issued recommendations (available at the project website) to help policy makers refine and improve innovation policies to be used in the upcoming framework programme (Horizon 2020).

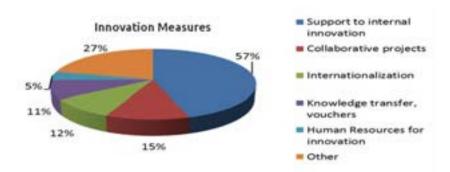
During the development of the methodlogy and recommendations, GPrix

- An overview of best practices and mechanisms used for supporting innovation in SMEs:
- A methodological framework to evaluate the impact of innovation support policies, including production of suitable benchmarks;
- Innovation pathways for SMEs in traditional sectors.

These new policies aim at better addressing the needs of SMEs in Europe and supporting them in their transition to the knowledge economy.

GPRIX
Good Practices in
Innovation Support
Measures for SMEs





DELEGATION POUR LE DEVELOPPEMENT DE LA TECHNOPOLE DE LIMOGES ET DU LIMOUSIN - France

AGENZIA NAZIONALE PER LE NUOVE TECNOLOGIE, L'ENERGIA E LO SVILUPPO ECONOMICO SOSTENIBILE - Italy

STAFFORDSHIRE UNIVERSITY. - United Kingdom

UNIVERSITAT POLITECNICA DE VALENCIA - Spain

FRAUNHOFER-GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V - Germany

UNIVERSITEIT MAASTRICHT - Netherlands

HARKEN

Heart and Respiration In-Car Embedded Nonintrusive Sensors

INFORMATION

Contract Number

286265

Theme

SME

Instrument

BSG-SME

Total Cost

1.360.045€

EC Contribution

1.053.061 €

Coordinator EC Contribution

503.133 €

Project Start Date

01-Jun-12

Scientific Coordinator

Paulo Gameiro (paulo.gameiro@borgstena.com)

> BORGSTENA GROUP PORTUGAL LDA Estrada Nacional 234, Km 87,7, Chão do Pisco 3521-909 NELAS

> > Duration

24 Months

Project Website http://harken.ibv.org

ABSTRACT (Project Objectives & Description of Work)

Road accidents are a major safety problem in developed countries, and fatigue is one of the critical factors.

In-vehicle fatigue detectors can reduce this problem, saving 4,000 lives and preventing tens of thousands injuries every year in the EU. In economic terms, this would mean annual savings of €7 billion. However, current approaches have strong limitations, because they lack the direct information about drivers' physiological variables, which are critical for a successful evaluation of their state.

The HARKEN project gathered a consortium of RTDs and SMEs that produce vehicle components (seat cover textiles and safety belts), smart materials, and sensors for bio monitoring, with the objective of creating a product to address that need, joining their experience to create a nonintrusive sensor system of heart and respiration with smart materials embedded in the seat cover and in the safety belt. This device will detect the effect of heart and respiration activity, filter and cancel the noise and artefacts expected in a moving vehicle, and calculate the relevant parameters, which will be delivered in a readable format to integrate it in a fatigue detector.

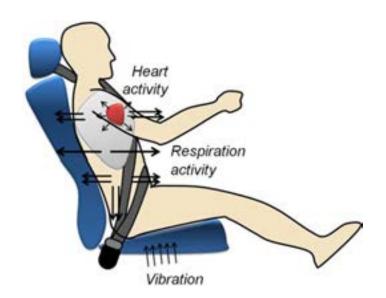
PROJECT RESULTS

The HARKEN system captures the heart rhythm and respiration in a completely unobtrusive manner. The results of the tests showed its feasibility as a potential tool to be integrated in cars in a near future. The next challenges will be: (i) to improving the industrialization of the developed prototypes; and (ii) the establishment of specific standards for the technological base of future driver drowsiness detectors.

This project provided the RTDs and SMEs with new, high technology products to sell in their sectors, and it will help them enter or improve their position in the automotive market, with a new device that will enable the creation of reliable fatigue detectors.

HARKENOS





SENSING TEX S.L. - Spain

ALATEX GMBH - Germany

PLUX - WIRELESS BIOSIGNALS S.A. - Portugal

INSTITUTO DE BIOMECANICA DE VALENCIA - Spain

OSAUHING EESTI INNOVATSIOONI INSTITUUT - Estonia

THE UNIVERSITY OF MANCHESTER - United Kingdom

FICOMIRRORS SA - Spain

Hilysens II

Demonstration Activities for the Clinical Validation of the Prototype HILYSENS Lab-on-a-Chip

INFORMATION

Contract Number

606348

Theme

SME

Instrument

CP

Total Cost

2.180.800€

EC Contribution

1.264.000 €

Coordinator EC Contribution

431.400 €

Project Start Date

01-04-2014

Scientific Coordinator

Orfeu Flores

(orfeu@stabvida.com)

STAB VIDA – INVESTIGAÇÃO E SERVIÇOS EM CIÊNCIAS BIOLÓGICAS, LDA.

Madan Parque

R. dos Inventores s/nº sala 2.18

2825-182 CAPARICA

Duration

24 Months

Project Website http://cordis.europa.eu/projects/r cn/111210_en.html

ABSTRACT (Project Objectives & Description of Work)

Hilysens I aimed to address the current limitations of serological detection diagnosis for Lyme disease with the development of an innovative multipeptide lab-on-a-chip device (Lyme card). This innovative card can become the standard Lyme detection tool, rising awareness and allowing accurate quantification of Lyme's disease incidence in order to carry out prevention campaigns. Hylsens I also developed a new fluorescence reader and user-friendly software for unambiguous interpretation of the results produced by the chip.

The overall goal of Hilysens II will be to validate the lab-on-a-chip prototype and method in a clinical setting, aiming at obtaining international regulatory approval as an *In Vitro* Diagnostic standard in Lyme disease test centers.

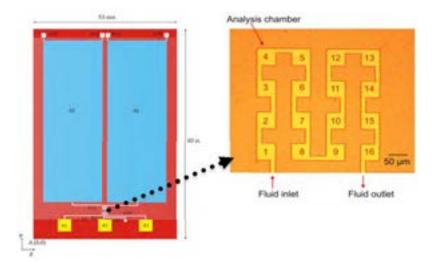
PROJECT RESULTS

Preliminary results indicate that the Immunological reaction that occurs inside the Lyme card, as developed and optimized by the Consortium, yields a sensitivity of 100%. It is expected to have the lab-on-a-chip prototype and method validated in a clinical setting.

Moreover, it will be possible to translate the technology developed during the project and apply it to other diseases and/or other standard immunoassays.

OHILYSENS









PARTNERS

B-C-A BORRELIOSE CENTRUM AUGSBURG BETRIEBS GMBH & CO KG - Germany MICROLIQUID SL - Spain MICRO BIO DEVICES S.R.L - Italy GOETEBORGS UNIVERSITET - Sweden

ICECLAY

Highly Efficient Production of Ultra-Lightweight Clay-Aerogel Materials and Their Integrated Composites for Building Insulation

INFORMATION

Contract Number

315548

Theme

SME

Instrument

BSG-SME

Total Cost

1.220.937 €

EC Contribution

948.885 €

Coordinator EC Contribution

241.472 €

Project Start Date

01-Oct-12

Scientific Coordinator

Bruno Carvalho (bruno.carvalho@activeaerogels.com)

ACTIVE AEROGELS
Rua Pedro Nunes
3030-199 COIMBRA

Duration

24 Months

Project Website http://iceclayfp7.eu/index.php/consortium

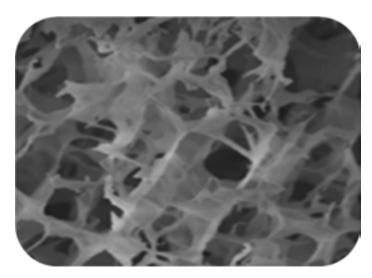
ABSTRACT (Project Objectives & Description of Work)

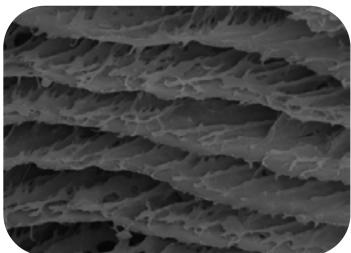
The Iceclay project aims at creating a superior thermal insulation material for the construction sector, able to ensure high insulation performances at lower costs when compared with other superinsulation products currently available. The material consists of a nano-structured ultra-lightweight clayaerogel composed by harmless and inexpensive nano-scale minerals, water and eco-friendly low-cost polymers combined through an innovative and cost effective freeze-drying process. Especially oriented for retrofitting actions, Iceclay products can be used in wall, floor, roof and ceiling insulation, where the extremely porous structure of its many different forms combined with its thermal performance makes it possible for the insulation of buildings to become thin and at the same time very effective.

PROJECT RESULTS

Iceclay products with porosity levels above 96%, bulk density around 0.020 g/cm3 and thermal conductivities below 30 mW m⁻¹ K⁻¹ are expected to be presented in the form of small boards easy to be handled and cut to size on site with no dust formation. It will be possible to use them as fillers in the form of granules for cavity insulation or as small strips applied with a joint tape for breaking down conductive "thermal bridging" between different construction/insulation materials.









DEVAN CHEMICALS NV - Belgium

ECOTERRA DESARROLLO SOSTENIBLE SL - Spain

CONSTRUCCIONES GARCIA RAMA SL - Spain

SLOVENSKI GRADBENI GROZD, GOSPODARSKO INTERESNO ZDRUZENJE -Slovenia

INSTITUTO PEDRO NUNES, ASSOCIACAO PARA A INOVACAO E DESENVOLVIMENTO EM CIENCIA E TECNOLOGIA - Portugal

BRUNEL UNIVERSITY - United Kingdom

ACTIVE SPACE TECHNOLOGIES, ACTIVIDADES AEROESPACIAIS S.A. -Portugal

LungCARD

Point-of-Care Blood Device for Fast and Reliable Prediction of Drug Response in Non-Small-Cell Lung Carcinoma Patients from Blood Samples

INFORMATION

Contract Number

315586

Theme

SME

Instrument

BSG-SME

Total Cost

1.479.575 €

EC Contribution

1.056.000 €

Coordinator EC Contribution

301.782 €

Project Start Date

07-Feb-13

Scientific Coordinator

Carla Clemente (clemente@stabvida.com)

STAB VIDA – INVESTIGAÇÃO
E SERVIÇOS EM CIÊNCIAS
BIOLÓGICAS, LDA.
Madan Parque
R. dos Inventores s/nº sala 2.18
2825-182 CAPARICA

Duration

24 Months

Project Website www.lungcard.eu

ABSTRACT (Project Objectives & Description of Work)

The standard of care in the treatment of non-small cell lung cancer (NSCLC) patients is a platinum-based chemotherapeutic agent, especially in advanced disease (stages III and especially IV). However, in addition to unpleasant side effects of chemotherapy, some of non small cell lung cancer tumours are not sensitive to this treatment. As an alternative to chemotherapy, target therapy with epidermal growth factor receptor-tyrosine kinase inhibitors (e.g. gefitinib or afitinib) have been used in clinical practice in patients with tumours harbouring mutations in the EGFR gene, which has led to an improvement in treatment effectiveness. For this reason, somatic mutations in exons 18-21 in tyrosine kinase domain of EGFR gene should be analysed to support the treatment decision for a patient with NSCLC.

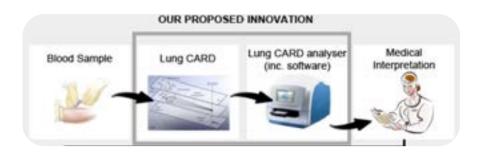
PCR-based methods are the current tools used to detect EGFR mutations from Fixed Paraffin Embedded (FFPE) tumour samples. However this approach has several limitations which, in turn, offer an excellent opportunity to develop a novel tool that could replace the tumour-based, pathology, assay with a blood based test, which is a minimally invasive approach for sample collection, avoiding all the problems associated with poor DNA extraction from FFPE samples. Furthermore this tool is intended to be easy to use, integrating "all laboratory-based process steps" in one single step with easy interpretation of results.

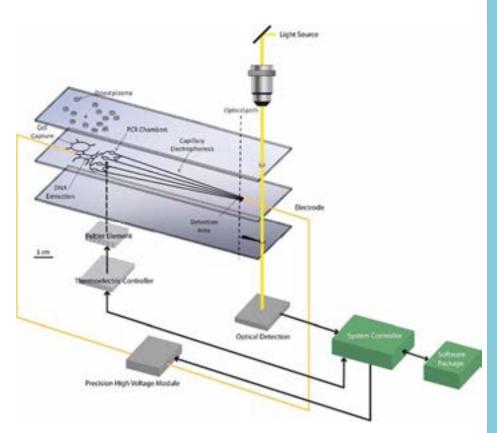
The LungCARD project aims to develop a micro fluidic chip (pre packed with reagents) and a bioanalyser (to interrogate and control the micro fluidic chip) that combines in an automatic process, blood sample processing, detection of EGFR somatic mutations in exons 19 and 21 and a user-friendly software to report mutations results.

PROJECT RESULTS

The expected final results of the LungCARD project are: (i) A Lung CARD lab-on-a-chip containing all reagents; (ii) A LungCARD lab-on-a-chip analyser; (iii) the process to extract and analyse tumour DNA from blood samples and (iv) the application of gold nanoprobes to lung cancer pharmacogenomics.







MICROLIQUID SL - Spain

MOLTECH SRL - Italy

FUNDAÇÃO DA FACULDADE DE CIÊNCIAS E TECNOLOGIA DA UNIVERSIDADE NOVA DE LISBOA - Portugal

UNIVERSITY OF HULL – United Kingdom

INSTITUT FUER PHOTONISCHE TECHNOLOGIEN E.V. - Germany

HULL AND EAST YORKSHIRE HOSPITALS NATIONAL HEALTH SERVICE TRUST – United Kingdom

NANO4COLOR

Design and develop a new generation of color PVD coatings for decorative applications

INFORMATION

Contract Number

315286

Theme

SME

Instrument

BSG-SME

Total Cost

1.366.520 €

EC Contribution

1.030.000 €

Coordinator EC Contribution

296.838 €

Project Start Date

01-May-13

Scientific Coordinator

Ricardo Alexandre (ricardo@teandm.pt)

TEANDM – TECNOLOGIA ENGENHARIA E MATERIAIS SA Parque Industrial de Taveiro 41-41 3045-504 TAVEIRO

Duration

24 Months

Project Website www.inform.pt/nano4color/index. html

ABSTRACT (Project Objectives & Description of Work)

A new strategy for the production of PVD (Physical Vapor Deposition) hard decorative Nanocomposite coatings consisting of a dielectric matrix with imbibed metallic nanoclusters will be developed to produce a wide range of colors, including green and red tones. This will allow overcoming the last barrier associated to the use of PVD coatings, currently only available with a single composition color, by producing tailored solutions for various applications.

Nanocomposite colored coatings produced in the scope of the project will be suitable for a broad range of products and markets. Many new applications would show up by expanding the color palette of coatings combined with functional properties (self-lubrication, self-cleaning, antiwear, hardness, etc.). The potential areas of application of decorative and functional coatings will be extensive to multiple materials, improving the competiveness of decorative coating companies on European market.

PROJECT RESULTS

The results of the project will be based in the availability of a new generation of Nanocomposite coatings, produced using environmental friendly techniques based on a new hybrid PVD industrial system that combines RMS with HIPIMS or Cluster Guns, suitable for a broad range of products and markets.

With the envisaged approach, a wide palette of colors will be available, produced with thin films (<2 microns) that can be applied in traditional areas of decorative and functional coatings, combining a wide range of achievable colors with functional properties (self-lubrication, self-cleaning, anti-wear, hardness, etc.).

It will be possible to coat an extensive range of materials with the developed techniques, making the use of PVD possible in different types of applications.

For the SME's involved in the project, operating in the sector of automotive, jewelry, equipment production, warehouse and building materials, the increase of added value and the enlargement of markets, will add a significant improvement to the their competiveness.









PVDCO SARL - France

KCS EUROPE GMBH - Germany

TECNOLOGIAS AVANZADAS INSPIRALIA SL - Spain

INSTITUTO PEDRO NUNES, ASSOCIAÇÃO PARA A INOVAÇÃO E DESENVOLVIMENTO EM CIÊNCIA E TECNOLOGIA - Portugal

UPPSALA UNIVERSITET - Sweden

ALLIANCE CONCEPT SARL - France

ALEA INNOVACIONES TECNOLOGICAS, SL - Spain

NANOFOOT

Materials, Components and Footwear with Enhanced Comfort Properties Based on Nanotechnologies

INFORMATION

Contract Number

606570

Theme

SME

Instrument

BSG-SME

Total Cost

846.318 €

EC Contribution

622.000 €

Coordinator EC Contribution

149.816 €

Project Start Date

01-Sep-13

Scientific Coordinator

Maria José Ferreira (mjose.ferreira@ctcp.pt)

On behalf of CURTUMES AVENEDA LDA. Rua de Aveneda 3880-836 OVAR

Duration

24 Months

Project Website
http://nanofoot.ctcp.pt/project.a
sp?idp=117&op=0

ABSTRACT (Project Objectives & Description of Work)

The main goal of NANOFOOT is to develop advanced and innovative nanotechnology-based solutions for leather and polymer components for footwear products, aiming at producing new sustainable and customer-driven consumer goods, where the health, environment, high quality of components, fair marketing communication and competitive sales price combine to promote the competitiveness of the companies.

The SMEs in NANOFOOT have the ambition of exploring the potential and the benefits of nanoparticles (NPs) available in the market for the development of new functional materials & products. The final objective is to get differentiated, high added value marketable materials and footwear consumer goods that will meet the needs and expectations of satisfied final consumers.

PROJECT RESULTS

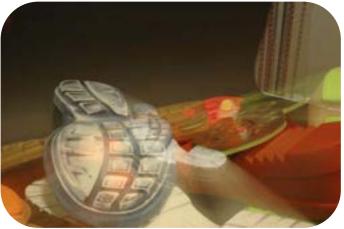
The expected results are:

- Knowledge about commercially available cost-effective nanoparticles;
- New products: coatings, leathers, polymeric nanocomposites and other footwear components using nanoparticles;
- Advanced antimicrobial thermal auto-regulated footwear;
- production methods using nanoparticles.









INDINOR-INDUSTRIAS QUIMICAS SA – Portugal

EVATHINK S.L. - Spain

TODO PARA SUS PIES SL - Spain

CAMMINALEGGERO DI PINI CAROLINA – Italy

CENTRO TECNOLÓGICO DE CALÇADO DE PORTUGAL — Portugal

UNIVERSIDADE DO PORTO – Portugal

INSTITUTO TECNOLÓGICO DEL CALZADO Y CONEXAS – Spain

CONSIGLIO NAZIONALE DELLE RICERCHE - Italy

PREMIVM

Low-Cost, Hand-Held, and Non-Invasive Optical Sensor for Multiparametric Field Aanalysis of Grapes and Leaves in Vineyards

INFORMATION

Contract Number

262011

Theme

SME

Instrument

BSG-SME

Total Cost

1.496.771 €

EC Contribution

1.142.030 €

Coordinator EC Contribution

206.748 €

Project Start Date

01-Feb-11

Scientific Coordinator

Miguel Neto

(mneto@agriciencia.com)

AGRI-CIENCIA – CONSULTORES

DE ENGENHARIA LDA.

Rua dos Lusíadas 52-1

1300-372 LISBOA

Duration

32 Months

Project Website www.premivm.eu

ABSTRACT (Project Objectives & Description of Work)

PREMIVM proposes a solution based on proven laboratory experimentations performed by partners of the consortium: a low-cost, handheld device capable of non-invasively estimating sugars, chlorophyll, polyphenols and nitrogen in grapes and leaves. All this in the vineyard, by means of the innovative use of chlorophyll fluorescence and reflectance multispectral data correlated by specific mathematical models, with GPS tags for all readings. The measurement principle is based on the natural response of vegetal species to light, where specific molecules are excited at a certain wavelength and emit radiation of a different wavelength.

The emission spectrum provides qualitative and quantitative data that can be used by vineyard managers to precisely control the field, reduce vineyard variability, define optimal harvesting times and increase production value.

PROJECT RESULTS

This project produced a pre-prototype for a portable compact spectrometer capable of measuring the fluorescence and reflectance of grapes and vine leaves in the field in a non evasive way.

The pre-prototype was used in the analysis of over a thousand samples from different varieties of harvested grapes from different castes, such as Riesling, Chardonnay, Sauvignon Carbenet, Blue Portuguese, Pinot Noir, Saint Laurent. The preliminary results showed that, when compared with standard laboratory methods, the pre-prototype provides data with significant correlation coefficients for several key parameters: chlorophyll, brix, polyphenols, organic acids and color index.

PHOTON SYSTEMS INSTRUMENTS SPOL SRO - Czech Republic

DVC NV - Belgium

RAIMUND PRUM - Germany

AZIENDA AGRICOLA IL PERACCIO DI MASIERO FRANCESCO & C. SOCIETÀ SEMPLICE AGRICOLA – Italy

QUINTA DA MATA FIDALGA -AGRICULTURA E TURISMO RURAL LDA – Portugal

CENTRUM VYZKUMU GLOBALNI ZMENY AV CR VVI - Czech Republic

KARLSRUHER INSTITUT FUER TECHNOLOGIE – Germany

CENTRE DE RECERCA I INNOVACIÓ DE CATALUNYA S.A. - Spain









TA101 GOCLIN

Clinical Development of TA-101 for the Treatment of Rheumatoid Arthritis

INFORMATION

Contract Number

606352

Theme

SME

Instrument

BSG-SME

Total Cost

1.716.400 €

EC Contribution

1.357.928 €

Coordinator EC Contribution

966.064 €

Project Start Date

01-Oct-13

Scientific Coordinator

Sofia Corte-real (scortereal@technophage.pt)

TECHNOPHAGE – I&D EM BIOTECNOLOGIA, SA Av. Prof Egas Moniz, Ed. Egas Moniz, Piso 2 1649-028 LISBOA

Duration

26 Months

Project Website http://ta101goclin.wordpress.com

ABSTRACT (Project Objectives & Description of Work)

The aim of the TA101 GOCLIN project is to take TA101 into the clinical stage of development for rheumatoid arthritis and prepare the product for a novel mode of administration in the market of biologic therapeutics.

Rheumatoid Arthritis is still today a debilitating disease with an unmet medical need for effective and reasonably priced treatments despite much effort to cure or control the disease.

TA101 is a small domain antibody that is being developed for the treatment of rheumatoid arthritis and has passed through preclinical efficacy studies with much success. TA101 will now undergo an upscaling process of production to enter clinical trials. TA101 GOCLIN is within the scope of the clinical development of TA101 and aims at providing safety data in humans through a clinical trial of Phases Ia and Ib. At the same time, TA101 GOCLIN will develop a novel mode of administration for TA101 to be used after the end of the project. This will provide a major competitive advantage for the product already during development stages. The innovative administration will use microneedle patches, a new method that allows the autonomous administration of the drug through the skin without the pain of conventional injections.

PROJECT RESULTS

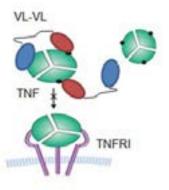
TA101 GOCLIN shall:

- Generate an efficient process development for the production of TA101 for clinical studies;
- Perform clinical studies of Phases Ia and Ib, namely safety studies in healthy volunteers and single ascending dose studies in RA patients;
- Develop an innovative solution for the efficient and simplified mode of administration for TA101 based on a innovative technology using a microneedle patch.









Q-BIOLOGICALS NV — Belgium

MICROCREATE BV — Netherlands

SGS BELGIUM NV — Belgium

LABORATOIRES PLASTO SANTE SAS —
France

ARTES BIOTECHNOLOGY GMBH - Germany

AMSPAR BV - Netherlands

TURNCOAT

Temperature Sensor Coatings for Smart Machining Tools

INFORMATION

Contract Number

262555

Theme

SME

Instrument

BSG-SME

Total Cost

1.724.081 €

EC Contribution

1.314.213 €

Coordinator EC Contribution

603.742 €

Project Start Date

01-Feb-11

Scientific Coordinator

Ricardo Alexandre (ricardo@teandm.pt)

TEANDM -TECNOLOGIA E
ENGENHARIA DE MATERIAIS, S.A.
Pq. Industrial de Taveiro,
Lote 41 e 42
3045-504 COIMBRA

Duration

24 Months

Project Website http://turncoat.inform.pt

ABSTRACT (Project Objectives & Description of Work)

The project aimed to design and develop a machining tool with a wear-resistant ceramic thin film temperature sensor, for in-situ, continuous wireless monitoring of the temperature during a machining operation. The main benefits are:

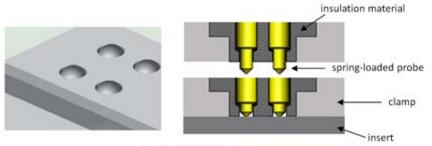
- Machining process optimization;
- Optimal use of the tools within their temperature range, resulting in increased lifetime of the tool;
- Detection of end-of-life of the tool: changing tools just in time and minimal scrap production;
- Optional integration in a Tool Condition Monitoring System for full automated production.

PROJECT RESULTS

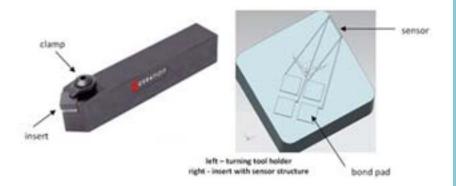
The main results obtained were:

- First prototype of complete system demonstrated during cutting test with successful temperature signal retrieval;
- First prototype of coating sensor and wireless transmitter device;
- First prototype of tool holder fit with reliable connection between transmitter and sensor lines.



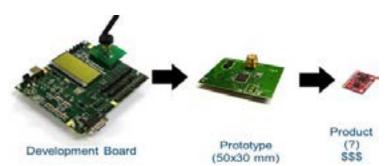


left - bottom view of the clamp right - cross section of the clamp









ZENSO - Belgium

KMWE PRECISIE EINDHOVEN BV - Netherlands

ACTARUS SAS - France

SIRRIS HET COLLECTIEF CENTRUM VAN DE TECHNOLOGISCHE INDUSTRIE VZW -Belgium

RHEINISCH-WESTFAELISCHE TECHNISCHE HOCHSCHULE AACHEN - Germany

INSTITUTO PEDRO NUNES, ASSOCIACAO PARA A INOVACAO E DESENVOLVIMENTO EM CIENCIA E TECNOLOGIA - Portugal

WATERPLASMA

Water Decontamination Technology For The Removal Of Recalcitrant Xenobiotic Compounds Based On Atmospheric Plasma Technology

INFORMATION

Contract Number

262033

Theme

SME

Instrument

BSG-SME

Total Cost

1.443.802 €

EC Contribution

1.069.934 €

Coordinator EC Contribution

276.436 €

Project Start Date

01-Jan-11

Scientific Coordinator

Carlos Freire De Oliveira (carlos.oliveira@ventilaqua.com)

VENTILAQUA – TRATAMENTO DE ÁGUAS E EFLUENTES, LDA. Estrada Nacional 1 Quinta Militares-Lote 10 Casa Meada-Antanhol 3040-584 ANTANHOI

Duration

24 Months

Project Website www.waterplasma.eu

ABSTRACT (Project Objectives & Description of Work)

The WaterPlasma project aimed at developing an innovative decontamination process to eliminate recalcitrant and toxic molecules from industrial effluents.

The technology under development was based on the use of One Atmosphere Uniform Glow Discharge (OAUGD) plasma as an Advanced Oxidation Process (AOP).

The target specifications of the reactor are:

- Continuous flow operation, able to process up to 250 liters/h;
- Able to oxidize different non-biodegradable recalcitrant compounds, reducing their concentration by 90%;
- Power consumption: 1kW;
- Targeted treatment cost: 2 €/m³.

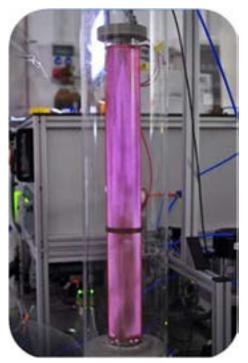
Long term exposure to some contaminants usually found in industrial effluents has been associated with serious long term health consequences. The use of the WaterPlasma technology will contribute to the safety of consumption water by drastically reducing the presence of residual hazardous compounds.

PROJECT RESULTS

The main result of the project WaterPlasma consisted of the development of a precompetitive prototype, able to process xenobiotic non-biodegradable pollutants in industrial wastewater.







PLASMA CLEAN LIMITED - United Kingdom LABORATORIOS ESPINOS Y BOFILL SA - Spain

BIOTEHNOS S. A. - Romania

CENTRE DE RECERCA I INNOVACIO DE CATALUNYA S.A. - Spain

AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS - Spain

FRAUNHOFER-GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V - Germany



RESEARCH POTENTIAL

CIBIO-NEW-GEN

Capacity Building at CIBIO for Research Using Next-Gen Sequencing

INFORMATION

Contract Number

286431

Theme

REGPOT

Instrument

CSA-SA

Total Cost

3.490.922 €

EC Contribution

3.113.821 €

Coordinator EC Contribution

3.113.821 €

Project Start Date

01-Jan-12

Scientific Coordinator

Maria José Cunha (mpcunha@iceta.up.pt)

ICETA - INSTITUTO DE CIÊNCIAS E TECNOLOGIAS AGRÁRIAS E AGRO-ALIMENTARES Rua D. Manuel II Ap. 55142 4051-401 PORTO

Duration **36 Months**

Project Website http://cordis.europa.eu/projects/r cn/101652 en.html

ABSTRACT (Project Objectives & Description of Work)

The focus of research at CIBIO is evolutionary biology, conservation genetics, and ecology in a conservation context. During the last years, new technologies arose in this field, which provide today the opportunity to generate new types of datasets with especially high information content for genome based investigation of biological diversity. The CIBIO-New-Gen proposal has two main objectives: (i) to install New Generation sequencing platforms and integrate the respective techniques in CIBIO scientists research, and (ii) to equip the unit with the computer infrastructure necessary to handle the increasing amount of data and analytical procedures for downstream sequence analysis and for modeling approaches. The acquisition and implementation of the new technologies and the development of the respective expertise will enable the institution to fully develop its potential in quality of research and international recognition. Moreover, an overall objective is also to ensure that CIBIO becomes a full participant of the European Research Area (ERA), reinforces its excellence and creativity and be able to take advantage of the knowledge and know-how existing in World leading research organizations in Europe.

PROJECT RESULTS

- A high throughput/output Next Generation Sequencing platform has been implemented. Connected to the acquisition of this advanced Sequencing platform and its implementation, CIBIO has recruited two experienced researchers with extensive experience in relevant areas of Next-Generation sequencing. In a further effort to strengthen CIBIO's Human potential high-skilled research, three more scientists have been employed.
- Six PI's and other experienced staff were involved in bilateral visits with centers of excellence for research related to the project.
- Three early stage career researchers took part in mobility training, in an effort to foster mobility during their education and hereby optimize their gain of knowledge and technological skills from supporting partners.

These activities were devoted to the broadening and facilitation of exchange of scientific experience at CIBIO, as well as to making knowledge available to the general public.

This project involves a single participant







FUTURE-CITIES

Expand the Centre of Competence in Future Cities of the University of Porto to Strengthen Inter-Disciplinary Research and Knowledge Transfer to the Industry in the Norte Region of Portugal

INFORMATION

Contract Number

316296

Theme

REGPOT

Instrument

CSA-SA

Total Cost

1.794.758 €

EC Contribution

1.615.224 €

Coordinator EC Contribution

1.615.224 €

Project Start Date

01-Oct-12

Scientific Coordinator

João Barros

(jbarros@fe.up.pt)

UNIVERSIDADE DO PORTO
FACULDADE DE ENGENHARIA
DEP. DE ENG. ELETROTÉCNICA
E DE COMPUTADORES
Rua Dr. Roberto Frias
4200-466 PORTO

Duration **42 Months**

Project Website www.futurecities.up.pt

ABSTRACT (Project Objectives & Description of Work)

Future Cities is an empowerment project led by the Center of Competence for Future Cities of the University of Porto, which is being implemented in a living lab model with the city of Porto as a basis. The model proposed by Future Cities intends to provide the city of Porto with several sensors and communications equipment. The work, developed in partnership with a wide range of companies, universities and institutions, is creating the conditions for research projects to be developed using advanced technologies for data collection through mobile platforms, wireless communications and large scale information processing.

The aim of this project is to contribute to the development in areas such as mobility, security and the life quality of citizens. The average size of the city and the multimodal transportation system are some of the features that make Porto an ideal city to welcome this development model.

PROJECT RESULTS

The Project is building a test bed with more than 700 wireless nodes, which is interoperable with hotspots and is connected to the access network through a fiber optic backbone. This test bed is based on three platforms:

- VANET is a network of vehicles which connect to one another and to the infrastructure. It is fully deployed, with a network of around 600 vehicles equipped with on-board units and fourteen road side units installed at downtown Porto, bus depots and the harbor;
- UrbanSense is a network of wireless sensors for monitoring air quality, environmental conditions, noise levels, traffic load and citizen concentration. 135 sensor units will be deployed, both on city buses and city sites;
- SenseMyCity is an infrastructure for collection of geo-indexed data through a mobile app and sensors (crowdsensing). The app is under development and a preliminary version has already been released for the general public.

This project involves a single participant









POLARIS

Unlocking the Research Potential of 3Bs Group, University of Minho, in Nanomedicine Field to Strengthen its Competitive Position at the European Level

INFORMATION

Contract Number

316331

Theme

REGPOT

Instrument

CSA-SA

Total Cost

3.128.789 €

EC Contribution

2.811.238 €

Coordinator EC Contribution

2.811.238 €

Project Start Date

01-Oct-12

Scientific Coordinator

Rui Reis

(rgreis@dep.uminho.pt)

UNIVERSIDADE DO MINHO
GRUPO 3B'S

AvePark, Zona Industrial da Gandra S. Claudio do Barco

4806-909 GUIMARÃES

Duration **36 Months**

Project Website www.projectpolaris.eu

ABSTRACT (Project Objectives & Description of Work)

The main objective of the project is to boost the 3B's group activity in the field of Nanomedicine. Several tasks are planned to achieve this final goal:

- Upgrading of the available infrastructures and equipments with state-ofthe-art nanotechnology devices;
- Recruitment of experienced researchers and technical staff;
- Establishment of a strategic intellectual property plan aimed at promoting and exploiting the developments achieved within the 3B's research activities;
- Dissemination of knowledge to the scientific community and the general public through several events in the field of Nanomedicine.

These objectives will be achieved in a close cooperation with 4 leading European institutions: Chalmers University of Technology, Max Planck Institute for Intelligent Systems, University College Dublin and University of Strathclyde Glasgow.

PROJECT RESULTS

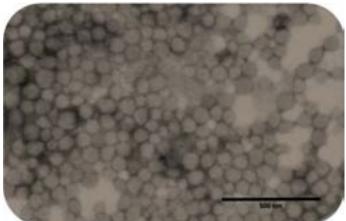
The obtained results and their commercial exploitation together with an enhanced IP protection shall have a direct impact on the growth, competitiveness, sustainability and employment in the local region. The applied perspective of the nanomedicine field and the interactions with local SMEs will stimulate the industrial uptake of novel systems developed under POLARIS and therefore, allow the transformation of the local industrial profile from low-tech resource-intensive SMEs to high-tech knowledge-intensive SMEs.

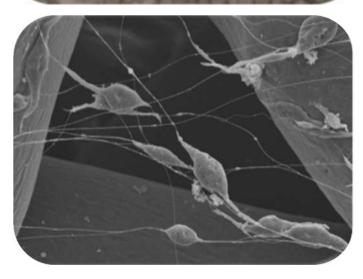
It is also expected that the project will contribute to reduce the "brain drain" of knowledgeable young and experienced researchers from 3Bs and the region and even promote a "brain gain" by recruting qualified foreign researchers wishing to do their research in the improved 3B's facilities and scientific environment.

This project involves a single participant









TEMP

Textile Excellence in EU-MED Partners

INFORMATION

Contract Number

245917

Theme

REGPOT

Instrument

CSA-SA

Total Cost

1.014.275 €

EC Contribution

886.042 €

Coordinator EC Contribution

257.737 €

Project Start Date

01-Dec-09

Scientific Coordinator

Helder Rosendo (hrosendo@citeve.pt)

CITEVE - CENTRO TECNOLÓGICO

DAS INDUSTRIAS TÊXTIL E DO

VESTUÁRIO DE PORTUGAL

Quinta da Maia

R. Fernando Mesquita 2785

4760-034 VILA NOVA DE FAMALICÃO

Duration **36 Months**

Project Website www.temp-eumed.eu

ABSTRACT (Project Objectives & Description of Work)

TEMP stands for Textile Excellence in EU - MED Partners. The TEMP project aims to reinforce the cooperation in the field of R&D management and research capacity building, between European countries and MPCs (Mediterranean Partner Countries), with a particular emphasis on the creation and consolidation of capacities in the Textile & Clothing field.

PROJECT RESULTS

The TEMP Project focused on improving the cooperation between Italy, Portugal and Tunisia in the field of textile & clothing, in order to develop, through an intensive and ambitious exchange schedule, a sustainable capacity building program addressing the Tunisian Centre CETTEX, namely in the following topics:

- Laboratory & R&D Management
- Intelectual Property Rights (IPR) Management
- Waste Water & Energy Management

The projet main actions were:

- Knowledge transfer in the three areas indicated above;
- Provision of technical assistance to enhance the knowledge transfer
- Definition of specific priorities in partner regions
- Definition of a roadmap for 2010-2015
- Creation of a contact platform with other scientific fields of knowledge or industrial sectors aiming to improve contacts within the fashion industry in partner countries

The major impacts of the TEMP Project were:

- Better integration of strategies between EU and MED countries;
- Improved S&T capacities in the MPC (Mediterranean Partner Country) country and EU convergence regions;
- Reinforcement of the regional economic and social development;
- Stronger and more effective links between partner organizations and other RTD organizations in the partner countries.









CENTRE TECHNIQUE DU TEXTILE - CETTEX - Tunisia

TREVISO TECNOLOGIA - AZIENDA SPECIALE PER L'INNOVAZIONE DELLA CAMERA DI COMMERCIO DI TREVISO – Italy

NEXT TECHNOLOGY TECNOTESSILE SOCIETÀ NAZIONALE DI RICERCA R.L. – Italy

ASSOCIAÇÃO TEXTIL E VESTUARIO DE PORTUGAL — Portugal

AGENCE DE PROMOTION DE L'INDUSTRIE ET DE L'INNOVATION- API - Tunisia



ERA-CHAIRS

LEAPFROG

Enhancing the Research and Innovation Potential of M-ITI through Human-Computer Interaction and Design Innovation

INFORMATION

Contract Number 621413

Theme

ERA-Chair

Instrument

CSA-SA

Total Cost

2 354 202 €

EC Contribution

2 118 781 €

Coordinator EC Contribution

2 118 781 €

Project Start Date

01-May-14

Scientific Coordinator

Nuno Jardim Nunes (nuno.nunes @m-iti.org)

M-ITI - MADEIRA INTERACTIVE TECHNOLOGIES INSTITUTE Polo Científico eTecnológico da Madeira, 2º andar Caminho da Penteada 9020-105 FUNCHAL

Duration 60 Months

Project Website http://erachair.m-iti.org

ABSTRACT (Project Objectives & Description of Work)

The goal of LEAPFROG is to expand the research and innovation potential of the Madeira Interactive Technologies Institute (M-ITI) of the University of Madeira through unlocking the full potential of interdisciplinary research in interactive technologies, while strengthening innovation and knowledge transfer activities in close collaboration with local and global industrial partners and contributing to the smart specialization strategy of Madeira. To this end, this project will support the following main activities:

- Upgrade the RDT capacity and capability by expanding the human potential and fostering a critical mass of researchers with interdisciplinary expertise in human-computer interaction (HCI);
- Improve M-ITI's innovation potential and impact at the regional, national and European levels, through design-driven innovation. Such approach will unravel the impact of open innovation and crowdsourcing on education, training and knowledge transfer, and extend the creative research capabilities of individuals and organizations in the region;
- Raise international awareness about the institute and connect M-ITI and its industry affiliates to the global knowledge networks.

As a consequence of these activities, it is expected to better integrate M-ITI with the European Research Area (ERA) by increasing the level of participation of the institute in the Horizon 2020 programmes.

PROJECT RESULTS

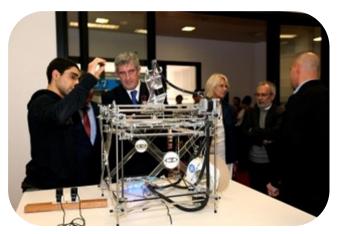
It is expect that LEAPFROG will be the ultimate trigger that will advance M-ITI's innovative, dynamic and cutting-edge research and will consolidate M-ITI as a key player that will compete with the best in the ERA. Specifically, M-ITI will enhance its excellence and innovation potential by recruiting an ERA Chair and a research team that will strongly enhance the research capacity of the institute by the attraction and retention of the best researchers. Moreover, the establishment of fruitful, long-lasting research collaborations with partnering organizations and other key European research groups will improve the participation in European programmes with an increased success rate in accessing funds. Consequently, there will be a direct impact at the regional and national level, as M-ITI will effectively contribute to the economical and social development of the Autonomous Region of Madeira and Portugal.

This project involves a single participant











SCIENCE IN SOCIETY

EUCYS2010

European Contest For Young Scientists

INFORMATION

Contract Number

268147

Theme SiS

Instrument

CSA-SA

Total Cost

1.047.256 €

EC Contribution

600.000 €

Coordinator EC Contribution

600.000 €

Project Start Date

03-Mar-10

Scientific Coordinator

Maria Geraldes

(mgeraldes@fjuventude.pt)

FUNDAÇÃO DA JUVENTUDE Rua das Flores 69

4050-265 PORTO

Duration 12 Months

Project Website

www.eiroforum.org/events/past_ events/2010 eucys/index.html

ABSTRACT (Project Objectives & Description of Work)

The EU Contest for Young Scientists was set up in 1989 to promote the ideals of cooperation and interchange between young scientists. The Contest is the annual showcase of the best of European student scientific achievement and as such attracts widespread media interest. The EU Contest gives students the opportunity to compete with the best of their contemporaries at European level, the chance to meet others with similar abilities and interests and to be guided by some of the most prominent scientists in Europe. In this way, the Commission seeks to strengthen the efforts made in each participating country to attract young people to careers in science and technology. The EU Contest for Young Scientists aims to build a more harmonious relationship between scientific endeavor and the European society at large.

The 22nd. EU Contest of Young Scientists took place on 24-29 September 2010, in Lisbon, Portugal, at the Electricity Museum, hosted by Fundação da Juventude (Youth Foundation). For th^{is} edition, special efforts were deployed to: (i) enhance a strong interest for natural and social sciences among young students Europe-wide; (ii) stimulate innovative projects realised by young European students; (iii) give scientific prizes consisting of one-week visits of some of the leading scientific installations in Portugal and in Europe; (iv) Boost the audience of the Portuguese national contest to the level of the leading national contests.

PROJECT RESULTS

The contest involved 85 projects and 124 undergraduates between 15 and 20 years old. They came from 32 European and 7 guest countries. The total number of attendees, including jury members, national organisers, escorts, participants, visitors, journalists, school visits, students and teachers, was around 5600:.

The 85 projects covered a wide range of disciplines: biology, chemistry, engineering, mathematics, physics, computer sciences, environment sciences, medical sciences and earth sciences.

On the basis of written and oral presentations of their works and interviews with jury members during the exhibition, 28 prizes were awarded to 24 projects, representing 35 contestants from 17 countries, for their high scientific content and originality. The high quality of the projects in competition were convincing proof of the promising strength of European education and training in the scientific and technical areas.

This project involves a single participant









FOSTER

Facilitate Open Science Training For European Research

INFORMATION

Contract Number

612425

Theme

SiS

Instrument

CSA-SA

Total Cost

1.946.905 €

EC Contribution

1.499.860 €

Coordinator EC Contribution

108.177 €

Project Start Date

01-02-2014

Scientific Coordinator

Eloy Rodrigues (eloy@sdum.uminho.pt)

SERVIÇOS DE DOCUMENTAÇÃO DA UNIVERSIDADE DO MINHO Largo do Paço 4704-553 BRAGA

Duration **24 Months**

Project Website

www.fosteropenscience.eu

ABSTRACT (Project Objectives & Description of Work)

This two year project aims to set in place sustainable mechanisms for EU researchers to FOSTER OPEN SCIENCE in their daily workflow, thus supporting the adoption of EU open access policies in line with the EU objectives on Responsible Research & Innovation.

The main objectives are:

- Support different stakeholders, especially young researchers, in adopting open access in the context of EU policies and, namely, in complying with the open access policies and rules of participation set out for Horizon 2020;
- Integrate open access principles and practice in the current research workflow by targeting the young researcher training environment;
- Strengthen the institutional training capacity to foster compliance with open access policies (beyond the FOSTER project and Horizon 2020);
- Facilitate the adoption, reinforcement and implementation of open access policies from other European research funding organisations (RFO), in line with EC recommendations.

PROJECT RESULTS

- The FOSTER portal, a state-of-the-art e-Learning platform, populated with Open Access training content, and supporting e-learning and self-learning activities;
- A comprehensive training programme, considering the different training approaches and delivery options according to the key target audience.
 At least 5 self-learning courses, 5 moderated e-learning courses and 20 face-to-face training events shall take place;
- The production of a Toolkit for training sessions with recommendations on most efficient use of training kits per stakeholders;

With 28 training initiatives (totalling more than 75 training events/courses), taking place in 17 European countries, the training programme of 2014 only, already achieved the two year objectives for face-to-face training (20 courses)

FOSTER







PARTNERS

GEORG-AUGUST-UNIVERSITAET GOETTINGEN STIFTUNG OEFFENTLICHEN RECHTS - Germany

DANMARKS TEKNISKE UNIVERSITET -Denmark

STICHTING EIFL.NET - Netherlands

STICHTING SPARC EUROPE - Netherlands

STICHTING LIBER - Netherlands

UNIVERSITY OF GLASGOW - United Kingdom

TECHNISCHE UNIVERSITEIT DELFT - Netherlands

THE OPEN UNIVERSITY - United Kingdom

UNIWERSYTET WARSZAWSKI - Poland

CONSORTIUM UNIVERSITAIRE DE PUBLICATIONS NUMERIQUES COUPERIN - France

AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS - Spain

THE UNIVERSITY OF EDINBURGH - United Kingdom

Neuro-Enhancement: Responsible Research and Innovation

NERRI

INFORMATION

Contract Number

321464

Theme

SiS

Instrument

CSA-SA

Total Cost

3.783.868 €

EC Contribution

3.312.430 €

Coordinator EC Contribution

250.969 €

Project Start Date

01-Mar-13

Scientific Coordinator

Ana Noronha

(anoronha@cienciaviva.pt)

CIÊNCIA VIVA – AGÊNCIA NACIONAL PARA A CULTURA CIENTÍFICA E TECNOLÓGICA Parque das Nações Alameda dos Oceanos Lote 2.10.01 1990-223 LISBOA

Duration **36 Months**

Project Website www.nerri.eu/eng/home.aspx

ABSTRACT (Project Objectives & Description of Work)

NERRI aims to contribute to the introduction of responsible research and innovation (RRI) in neuro-enhancement (NE) in the European Area.

The project will develop an analytic classification of neuro-enhancement technologies into currently available methods, experimental and hypothetical technologies. This classification will be developed throughout the project.

NERRI will then promote a broad societal dialogue about neuroenhancement. This will be achieved through mobilization and mutual learning (MML) activities with innovative methodologies.

Finally, NERRI will help shaping a normative framework supporting the governance of neuro-enhancement technologies

PROJECT RESULTS

- A) NERRI shall produce a classification of neuro-enhancement technologies, distinguishing currently available, experimental or hypothetical innovations. Over the long term, this tool will help monitor the migration of technologies from hypothetical to experimental to available, and of their uses from therapy to improvement of cognitive capabilities. The classification will also help early identification of potentially socially sensitive issues.
- B) NERRI will develop and test novel formats for managing the diversity of opinions, hopes and fears. These tools for interaction between scientists, policy-makers, industry, civil society groups, patients and the wider public will be tailored to specific subjects related to neuro-enhancement, but will also work as inspiration for other mutual mobilization and learning execises, as well as for RRI in general. MLL exercises will also be shaped to attract media coverage on issues that otherwise would remain overlooked.
- C) NERRI will contribute to a normative framework for neuro-enhancement. This should be presented in three main ways:
- A Shared Agenda on Neuro-enhancement in Europe, resulting from a series of meetings between stakeholders and policy makers;
- this agenda will be continuously developed after the end of the project, through a Deliberative Stakeholder Platform;
- and a protocol for good governance of neuro-enhancement technologies that may be relevant for other technological innovations.



NEURO-ENHANCEMENT responsible research and innovation







LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE - United Kingdom

STICHTING KATHOLIEKE UNIVERSITEIT – Netherlands

OESTERREICHISCHE AKADEMIE DER WISSENSCHAFTEN – Austria

SCUOLA INTERNAZIONALE SUPERIORE DI STUDI AVANZATI DI TRIESTE – Italy

INSTITUTO DE BIOLOGIA MOLECULAR E CELULAR - IBMC — Portugal

CENTER FOR FORMIDLING AF NATURVIDENSKAB OG MODERNE TEKNOLOGI FOND – Denmark

STICHTING KATHOLIEKE UNIVERSITEIT BRABANT UNIVERSITEIT VAN TILBURG – Netherlands

KOZEP-EUROPAI EGYETEM - Hungary

UNIVERSITAET STUTTGART - Germany

JOHANNES GUTENBERG UNIVERSITAET MAINZ – Germany

UNIVERSITAET LINZ - Austria

UNIVERSITAT POMPEU FABRA - Spain

FONDAZIONE TOSCANA LIFE SCIENCES – Italy

HASKOLI ISLANDS - Iceland

GENETIC ALLIANCE UK LTD - United Kingdom

THE EUROPEAN BRAIN COUNCIL AISBL - Belgium

KING'S COLLEGE LONDON - United Kingdom



COHERENT DEVELOPMENT OF RESEARCH POLICIES

INFORMATION

Contract Number

316355

Theme

COH

Instrument

CSA-SA

Total Cost

426.900 €

EC Contribution

389.915 €

Coordinator EC Contribution

70.720 €

Project Start Date

01-Jan-13

Scientific Coordinator

Vicente Pinto

(vicente.pinto@cm-espinho.pt)

MUNICÍPIO DE ESPINHO Câmara Municipal de Espinho Praça Dr. José Oliveira Salvador Apartado 700 4501-901 Espinho

> Duration 24 Months

Project Website www.procurers-network.com

ABSTRACT (Project Objectives & Description of Work)

The C4BI project is a Network of Procurers that will provide an integrated answer to the challenge of urban innovation by combining in the same network Local Authorities and Innovation organizations, thus creating the conditions for impacting both the demand and the supply.

The overall aim of the project is to foster the development of a consistent and sustainable policy of innovative public procurement within European cities focused on areas that have been identified by the European Commission as one of the major societal challenges: the issues related to "active and healthy ageing" (addressed by the European Innovation Partnership on Active and Healthy Ageing) and to a demographic ageing of urban population, reflected in a context of "Ageing Cities".

The C4BI project will address this key societal challenge through innovative public procurement processes. It will launch coordinated public pre-procurement processes within the 4 participating cities/regions in order to gather these conditions and facilitate the access of an urban ageing population to social and civic mobile services by involving main local operators of mobile networks. It will also engage into pilot demonstration of application services, in order to better specify and define the requirements for the procurement of a full platform for the deployment of social and civic urban services, particularly aimed towards an ageing population.

PROJECT RESULTS

The C4BI project approach relies on the networking of urban public procurers that will enhance internal processes and foster transnational procurement processes with innovation facilitators through a:

- coordinated learning cycle: each city authority carries out an assessment of their public procurement needs in terms of innovation potential, societal gains and long-term sustainability;
- coordinated pilot process: partners will jointly work on models of innovation-orientated public procurement capable of stimulating solution providers to be involved in providing answers that meet the challenges addressed in the project;
- assessment of results and lessons; the results, both in terms of internal processes and external impact, will be assessed and gathered in a guide on "Developing Innovative Urban Public Procurement".

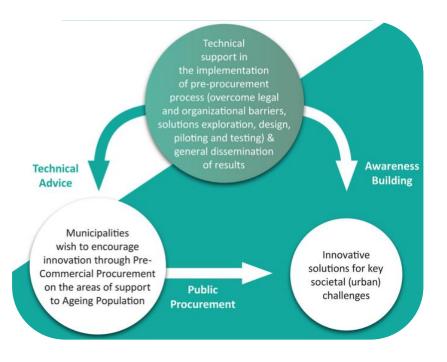
STAFFORDSHIRE COUNTY COUNCIL – United Kingdom

DIPUTACION PROVINCIAL DE CASTELLON - Spain

GMINA LUBLIN - Poland

INOVAMAIS - SERVIÇOS DE CONSULTADORIA EM INOVAÇÃO TECNOLÓGICA S.A. - Portugal







INTERNATIONAL COOPERATION

ChinaAccess4EU

Supporting the EU Access to Chinese Research & Innovation Programmes

INFORMATION

Contract Number

244459

Theme

INCO

Instrument

CSA-SA

Total Cost

550.753 €

EC Contribution

498.651 €

Coordinator EC Contribution

101.276 €

Project Start Date

01-Jan-10

Scientific Coordinator

Augusto Eduardo Medina (augustomedina@spi.pt)

SOCIEDADE PORTUGUESA

DE INOVAÇÃO S.A.

Av. M. Gomes da Costa 1376

4050-318 PORTO

Duration **30 Months**

Project Website www.access4.eu/china

ABSTRACT (Project Objectives & Description of Work)

The ChinaAccess4EU project had the following general objectives:

- Increase the awareness and dissemination in the EU of access opportunities for European researchers and research organisations in Chinese national research and innovation programmes;
- Increase S&T cooperation between Europe and China, especially effective collaborations of European researchers and research organisations in Chinese national research and innovation programmes;
- Help develop the reciprocity aspect of EU-China Science & Technology agreements and improve EU's understanding of the respective research systems in China.

The project methodology consisted of the following main activities:

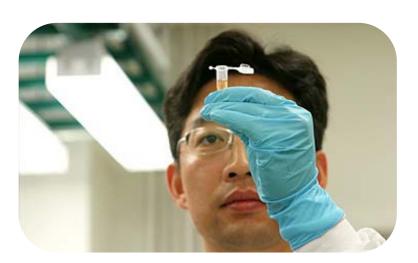
- Mapping of the access opportunities in China;
- Dissemination of the results to European research organisations and multipliers;
- Monitoring of the participation of researchers from the EU in Chinese programmes;
- Provision of feedback and recommendations to the EC.

PROJECT RESULTS

The ChinaAccess4EU project ended in August 2012. A new project Dragon STAR, where SPI also participates, is currently running to pursue the same objectives. For more information, please check the project website at:www.dragon-star.eu.







EUROPEAN BUSINESS AND INNOVATION CENTRE NETWORK - Belgium

UNIVERSITE JOSEPH FOURIER GRENOBLE - France

STEINBEIS INNOVATION GGMBH - Germany

THE UNIVERSITY OF NOTTINGHAM - United Kingdom

TORCH HIGH TECHNOLOGY INDUSTRY DEVELOPMENT CENTER - China

INSTITUTE OF POLICY AND MANAGEMENT, CHINESE ACADEMY OF SCIENCES – China

COWAY INTERNATIONAL TECHTRANS CO. LTD - China

ZHEJIANG UNIVERSITY - China

HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY - Hong-Kong

EU PROJECT INNOVATION CENTRE (CHENGDU) - China



FUSION

INFORMATION

Contract Number

F4E-FPA-375

Theme

EURATOM-FUSION

Instrument

not applicable

Total Cost

8.237.800 €

EC Contribution

3.456.310 €

Coordinator EC Contribution

2.200.000 €

Project Start Date

23-Jan-13

Scientific Coordinator

Bruno Soares Gonçalves (bruno@ipfn.ist.utl.pt)

INST. DE PLASMAS E FUSÃO NUCLEAR INST. SUPERIOR TÉCNICO Avenida Rovisco Pais 1 1049-001 LISBOA

Duration

36Months

Project Website
www.ipfn.ist.utl.pt/F4E_FPA375/
aboutITER.html

ABSTRACT (Project Objectives & Description of Work)

ITER (*www.iter.org*) will be equipped with a set of plasma diagnostics to measure the plasma and first wall parameters. The functions of these plasma diagnostics are machine protection, basic and advanced control, and physics studies. The diagnostics are necessary to meet the overall ITER project requirements. This project aims at designing the ITER Plasma Position Reflectometry system. This diagnostic system comprises several components: antennas, waveguides, microwave electronics and real-time analysis software. The antennas and waveguides launch and receive a radio frequency signal in the range 15 – 75 GHz, which is assessed by microwave electronics and real-time analysis software to determine the density profile at the plasma edge and to estimate the distance between the plasma and tokamak wall. This parameter is then fed to the plasma control system and used to keep the plasma stable and prevent it from touching the wall, leading to a plasma disruption which would stop the nuclear fusion process.

The project will bring together the work of approximately 30 physicists and engineers per year.

PROJECT RESULTS

The project covers R&D (including prototypes of the transmissions lines and microwave electronics), engineering, quality support and managerial activities, and testing from functional specifications, up to the supply of an F4E-approved final design.

This activity will be followed by the support for the production of Manufacturing Drawings for all components of the system as well as the final design for Electronics Components and for the data acquisition and real-time software.



DEUTSCHES ZENTRUM FUER LUFT - UND RAUMFAHRT EV - Germany

TEKNOLOGIAN TUTKIMUSKESKUS VTT - Finland

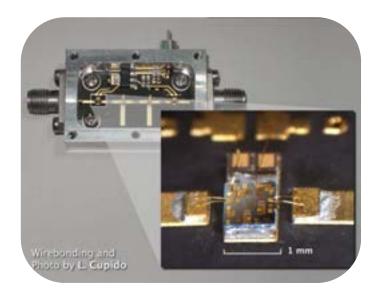
SERENERGY A/S - Denmark

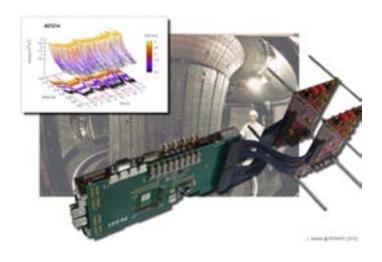
CONSIGLIO NAZIONALE DELLE RICERCHE - Italy

UNIVERSITAT POLITÈCNICA DE VALÈNCIA -Spain

INOVAMAIS - SERVIÇOS DE CONSULTADORIA EM INOVAÇÃO TECNOLÓGICA S.A. - Portugal

RHODIA OPERATIONS - France







ARTEMIS

EMMON

Embedded Monitoring

INFORMATION

Contract Number 100036

Theme

ARTEMIS

Instrument

JTI-CP-ARTEMIS

Total Cost

2.576.275 €

EC Contribution

430.238 €

Coordinator EC Contribution

114.695 €

Project Start Date

01-Mar-09

Scientific Coordinator

Délio Almeida dalmeida@criticalsoftware.com

CRITICAL SOFTWARE, S.A.

PARQUE INDUSTRIAL DE TAVEIRO, LOTE 49

3045-504 COIMBRA, PORTUGAL

Duration

39 Months

Project Website

www.artemis-emmon.eu

ABSTRACT (Project Objectives & Description of Work)

The EMMON project aimed at large-scale and dense real-time embedded monitoring of geographical extensions using Wireless Sensor Network (WSN) devices - small communicating & cooperative nodes with sensors.

To achieve this ambition, EMMON performed technological research at the level of devices, in new, efficient, and low power consumption communication protocols, embedded software with better overall energy efficiency, secure, fault-tolerant and reliable middleware for large scale monitoring and remote command & control operational systems for endusers.

The objective was to create an integrated framework of technologies for large scale and dense WSNs that could allow embedded devices (up to 10,000) to be placed placed in the environment to perform continuous monitoring and situation analysis, targeted at specific scenarios (water pipelines, urban quality of life, forest and marine environments, civil protection) detecting abnormal variations and rapidly broadcast alarms and alerts.

PROJECT RESULTS

EMMON produced the following results:

- Created an integrated framework of technologies for Large Scale WSN (LSWSN): designed a new EMMON Network Architecture to address the scalability challenge;
- Deployed DEMMON1 in 2010, then the largest single-site WSN network deployment in Europe for R&D purposes (+300 nodes);
- Showcased DEMMON2 in SANJOTEC Living Lab, Portugal in 2012, a fully functional system prototype for Smart Buildings, and again then the largest single-site WSN network deployment in Europe for R&D purposes (+400 nodes, 1,200 sensors);
- Enhanced ZigBee network protocol implementations (OpenZB);
- Developed a completely new LSWSN Middleware which is able to cope with thousands of nodes;
- Developed an emulation system to test network behaviour and system scalability in (almost) real-time;
- Developed a Centralized C&C (Command & Control) center;









INSTITUTO SUPERIOR DE ENGENHARIA DO PORTO — Portugal

INTESYS LTD - United Kingdom

CENTRO DE ESTUDIOS E INVESTIGACIONES TECNICAS – Spain

CRITICAL SOFTWARE TECHNOLOGIES LTD - United Kingdom

TRINITY COLLEGE DUBLIN - Ireland

ARISTOTLE UNIVERSITY OF THESSALONIKI - Greece

SESM SOLUZIONI EVOLUTE PER LA SISTEMISTICA E I MODELLI S.C.A.R.L. – Italy

AKTING INGENIARITZA SL - Spain



CLEAN SKY JTI

AERODESIGN

Preliminary Design Methodologies

INFORMATION

Contract Number

255851

Theme

CleanSky

Instrument

JTI-CS

Total Cost

193.268 €

EC Contribution

115.630 €

Coordinator EC Contribution

26.138 €

Project Start Date

01-Jan-10

Scientific Coordinator

Rui Venâncio (rui.venancio@gmv.com)

GMVIS SKYSOFT, S.A.

Av. D. João II Lote 1.17.02

Torre Fernão Magalhães, 7°

1998-025 LISBOA

Duration

44 Months

Project Website http://cordis.europa.eu/project/rcn/ 98069_en.html

ABSTRACT (Project Objectives & Description of Work)

AERODESIGN aims at studying the future configuration of commercial aircrafts, it is important to find the most efficient method for preliminary design supported by the a complete database of existing assets and validated results. This will allow to create a new specific preliminary design process for the Green Regional Aircraft which will yield a future advanced technology aircraft. The AERODESIGN project is to generate a multisegment and multi-level technical framework for a preliminary design methodology solution providing a realistic preliminary aircraft model based in a database gathering existing aircraft data. AERODESIGN targets the development of an integrated process of design optimization.

AERODESIGN combine several technologies for a cost effective solution:

- Design of an integrated SHM system, with reduced number of sensors;
- Optimum location of sensors;
- Sensor fault detection methods;
- Improved diagnostic and prognostic tools.

PROJECT RESULTS

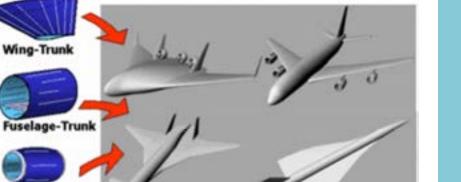
AERODESIGN proved flexibility and reusability in different contexts and allows future evolution/expansion and updates.

The AERODESIGN tool was designed and developed in a highly modular fashion with a transparent interface and open architecture for an easy integration, as a whole or partially, with other aircraft design tools, namely in Multidisciplinary Design and Optimization (MDO) environments.

SPIN.WORKS LDA – Portugal

TECHNISCHE UNIVERSITEIT DELFT –
Netherlands

KE-WORKS BV - Netherlands



Connection element

INFORMATION

Contract Number

298182

Theme

CleanSky

Instrument

JTI-CS

Total Cost

299.577 €

EC Contribution

202.423 €

Coordinator EC Contribution

197.423 €

Project Start Date

01-May-12

Scientific Coordinator

Abel Mendes

(abel.mendes@activespacetech.com)

ACTIVE SPACE TECHNOLOGIES ACTIVIDADES AEROESPACIAIS S.A. Pg. Industrial de Taveiro, Lote 12 3045-508 COIMBRA

Duration

32 Months

Project Website http://cordis.europa.eu/projects/rcn/ 103468 en.html

ABSTRACT (Project Objectives & Description of Work)

A huge effort has been dedicated to improving the performance of aircraft propellers, as well as of aerodynamics surfaces, to maximise the overall efficiency and reduce the fuel consumption.

In that sense, blade morphing technologies have become a must for long term developments. In the meanwhile, however, the effects of several smaller changes have been investigated with very good preliminary results, such as Gurney flaps and other trailing edges.

In this project, Active Space Technologies (AST) will develop a new concept of an Active Gurney Flap (AGF) in collaboration with the Green Rotorcraft Consortium (GRC1) of Clean Sky. The project scope is the complete design and manufacturing of the controller, actuator and Gurney flap mechanism, which will be assembled in a set of four scaled model helicopter blades and tested in a wind tunnel.

PROJECT RESULTS

The AGF system shall be compliant with a set of challenging system requirements related with the actuation frequency (up to 150 Hz), the required maximum deployed extension (2% of the blade chord), the limited available room at the flap location (about 1.5 mm) and movement perpendicular to the blade surface.

This project involves a single participant



INFORMATION

Contract Number

267522

Theme

CleanSky

Instrument

JTI-CS

Total Cost

99.741 €

EC Contribution

74.805 €

Coordinator EC Contribution

39.846 €

Project Start Date

02-Feb-09

Scientific Coordinator

António Reis

(antonio.reis@optimal.pt)

OPTIMAL STRUCTURAL SOLUTIONS LDA. Parque Doroana, Androana R. de São Francisco 786 Armazém CE

2645-019 ALCABIDECHE

Duration

34 Months

Project Website http://cordis.europa.eu/projects/rcn/ 100390_en.html

ABSTRACT (Project Objectives & Description of Work)

The objective of Fatigue Test is to further develop the understanding of the fatigue behavior of a composite fuselage panel. Towards that objective, a method was developed for the integration of acoustic and fiber optics sensors in the panel.

In particular, FT aimed at applied research for integration of fatigue test sensors into CFRP (Carbon-Fiber-Reinforced Polymer) aircraft panels with stiffeners.

FT required 3 core sets of competences, covered by each of the partners:

- Engineering of aeronautical composite structures and definition of test campaigns and coordination;
- Testing of composite structures and NDT inspections;
- Manufacturing composite structures to aeronautical standards.

PROJECT RESULTS

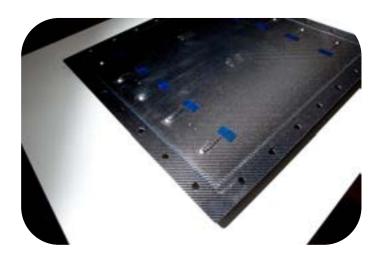
Following on the design and manufacturing of the panel, it was tested statically and under fatigue conditions. The data recorded by the embedded sensors was processed to evaluate the damage generation and growth.

This project will contribute to the development of the lighter airframes of the future.

INSTITUTO DE SOLDADURA E QUALIDADE -Portugal







InFlightFOS

Improved Reliability and Integration of FBG Systems for in Flight Applications

INFORMATION

Contract Number 255768

Theme CleanSky

Instrument

JTI-CS

Total Cost

239.846 €

EC Contribution

169.896 €

Coordinator EC Contribution

119.941 €

Project Start Date

01-Jan-10

Scientific Coordinator

Francisco Araújo (francisco.araujo@fibersensing.com)

FIBERSENSING SISTEMAS AVANÇADOS DE MONITORIZAÇÃO, S.A. Rua Vasconcelos Costa 277 4470-640 MAIA

Duration

12 Months

Project Website http://w3.fibersensing.com/rd/Pr ojects/InflightFOS

ABSTRACT (Project Objectives & Description of Work)

Fiber Bragg grating (FBG) sensors have gained increasing importance for structural health monitoring in aeronautics, enabling large-scale measurement of most relevant structural parameters while mitigating technical constrains of conventional sensors. FBG technology application for real-time structural monitoring during flight is currently limited by the lack of flight qualified interrogation equipment.

The main goal of the project was the update of existing instrumentation to suit the environmental and operational requiems of in-flight applications, by increasing instrumentation reliability, measurement repeatability and precision.

An additional problem that prevented this technology to be employed for in-flight monitoring applications was the equipment interfacing with on-board avionics. A second objective of the work was then the integration of avionic standards within the FBG interrogation system, which allowed for direct interfacing with on-board avionics.

PROJECT RESULTS

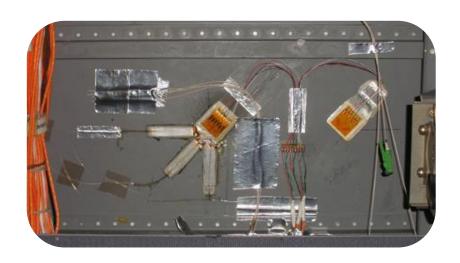
As key result from the project, a FBG data adquisition equipment suitable for flight was designed and implemented. The design incorporated the mechanical, electrical and communication interfaces required for integration with Alenia's C27 instrumentation platform.

The equipment was also designed to follow the functional requirements established by Alenia: the unit operates as a standalone instrument, and automatically starts reading, recording and transmitting by operating a single mechanical switch. In addition to real time data transmission, data is internally recorded automatically. The internal FBG interrogation unit can also be accessed directly through an Ethernet connector on the front panel of the equipment. A software application was provided to be able to configure the unit, to retrieve or delete the saved data, and also to be able to stop the real time controller application to allow the FBG interrogation equipment to be controlled by other host PC applications.

The equipment was validated for flight, first with an initial vibration campaign and then on a 2 hour flight on a Spartan transport plane.

NDT EXPERT - France

INSTITUTO DE ENGENHARIA MECÂNICA E GESTÃO INDUSTRIAL - Portugal





Intelli-SHM

Intelligent Stress Health Monitoring

INFORMATION

Contract Number

255816

Theme

CleanSky

Instrument

JTI-CS

Total Cost

297.727 €

EC Contribution

223.295 €

Coordinator EC Contribution

133.596 €

Project Start Date

01-Dec-09

Scientific Coordinator

Júlio Viana

(jviana@critical-materials.com)

CRITICAL MATERIALS, S.A.

AVEPARK - Zona Industrial

da Gandra Ap. 4152

4806-909 CALDAS DAS TAIPAS

Duration

18 Months

Project Website

www.critical-materials.com/en/r-d/intelli-shm

ABSTRACT (Project Objectives & Description of Work)

The aim of the Intelli-SHM project was the development of a new generation of Structural Health Management (SHM) system for aircraft. The ultimate purpose of this project was to lower the costs associated with aircraft maintenance and inspection operations through an effective monitoring of structural damage of critical aerostructures.

The Intelli-SHM project is part of the GRA-LW - Green Regional Aircraft - Low Weight Configuration development platform from CleanSky, led by Alenia Aeronautica S.P.A.. The project aims at developing an integrated system for monitoring, diagnostic and prognostic of components for the next generation aircraft, allowing for a more precise evaluation of the their structural integrity.

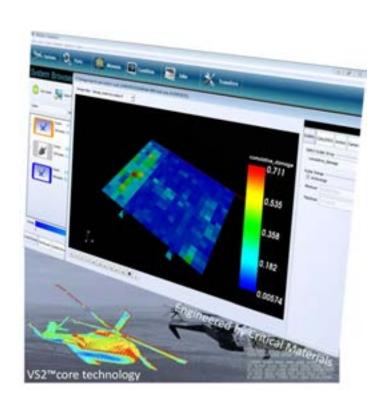
PROJECT RESULTS

Tha main outputs of Intelli-SHM were:

- an integrated SHM system, with reduced number of sensors, combining experimental sensor data and model based damage diagnostic methods;
- a methodology for optimum location of sensors (sensor positioning);
- novel sensor fault detection methods (sensor sanity),
- improved diagnostic and prognostic tools (damage detection, location, severity and consequence)

The proposed approach was based on the customization of proprietary VS2TM core technology, in order to develop enhanced diagnostic and prognostic capabilities. This new generation of SHM systems will allow, in the near future, for a more efficient management of the inspection and maintenance processes, along with gains in the final weight of the aerostructures, with clear advantages in the aircraft's performance.

CRITICAL SOFTWARE SA - Portugal





SensWIRING

Harness Integrated Delocalized Sensors Network for Wiring Health Monitoring

INFORMATION

Contract Number

620163

Theme

CleanSky

Instrument

JTI-CS

Total Cost

492.800 €

EC Contribution

369.600 €

Coordinator EC Contribution

177.000 €

Project Start Date

01-Oct-2013

Scientific Coordinator

Júlio Viana

(jviana@critical-materials.com)

CRITICAL MATERIALS, S.A.

AVEPARK - Zona Industrial

da Gandra Ap. 4152

4806-909 CALDAS DAS TAIPAS

Duration

24 Months

Project Website

www.critical-materials.com/en/rd/sensWIRING

ABSTRACT (Project Objectives & Description of Work)

The sensWIRING project will develop a wiring health monitoring system, WHM, for aircraft. The main focus is placed on the development of a smart sensor network with defect detection functions, a low power embedded electronics, a wireless communication component and an energy harvesting and management function. The sensWIRING project is part of the SGO - Systems for Green Operations development platform from CleanSky, led by Safran.

The main goal is the development of the sensing technology that fits into the wire harness and fulfills their measurement function properly. Besides developing the defect sensing technology, the measurement techniques and parameters as well as the interpretation of the measurements will be performed. The developed WHM will be prototyped, tested and demonstrated at laboratory environment.

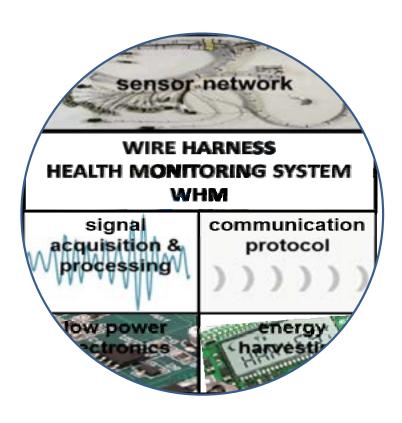
PROJECT RESULTS

The SensWIRING project will be a milestone in the technology for aircraft on-board WHM system. The technology shall be able to detect and locate chafing in electrical wires. Prototypes of the technologies shall be developed for testing under laboratorial conditions.

The developed technology shall be patented.

ADVANTEC GMBH - Germany

JURGENHAKE GMBH - Germany



SpaceFBG

FOBG - Design and validation of FOBG for SHM application

INFORMATION

Contract Number

255789

Theme

CleanSky

Instrument

JTI-CS

Total Cost

78.000 €

EC Contribution

58.500 €

Coordinator EC Contribution

58.500 €

Project Start Date

10-May-10

Scientific Coordinator

Francisco Araujo

(francisco.araujo@fibersensing.com)

FIBERSENSING
SISTEMAS AVANÇADOS
DE MONITORIZAÇÃO, S.A.
Rua Vasconcelos Costa 277
4470-640 MAIA

Duration

9 Months

Project Website

http://w3.fibersensing.com/rd/Pr ojects/SpaceFBG

ABSTRACT (Project Objectives & Description of Work)

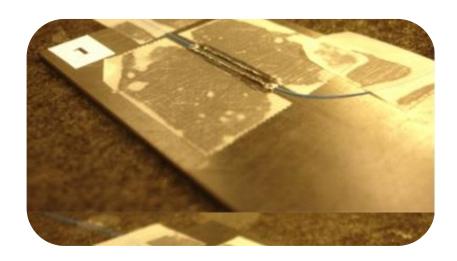
The SPACEFBG Project aimed at drawing a prototype for a passive athermal FBG (Fiber Bragg Grating) strain gage sensor able to mitigate thermal cross-sensitivity.

Presently, the main drawback of a fiber Bragg grating strain sensor is its thermal cross-sensitivity. Such a single parameter measurement is difficult to implement, since cross-sensitivity to temperature compels the use of an additional temperature reference.

PROJECT RESULTS

The SPACEFBG project demonstrateded the feasibility of a passive athermal FBG strain gage that renders the measurement of temperature optional. Its innovative design ensures athermal operation of the strain gage by canceling the intrinsic fiber optic thermal sensitivity. Moreover, the passive athermal design may be adjusted to further compensate for structural thermal expansion, thus enabling stress and load-induced strain components to be measured.

This project involves a single participant





Telemharsh

Telemetric System Acquisition in Harsh Environment

INFORMATION

Contract Number

323494

Theme

CleanSky

Instrument

JTI-CS

Total Cost

399.760 €

EC Contribution

288.300 €

Coordinator EC Contribution

288.300 €

Project Start Date

01-Apr-13

Scientific Coordinator

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ACTIVE SPACE TECHNOLOGIES ACTIVIDADES AEROESPACIAIS S.A. Parque Industrial de Taveiro, Lote 12

3045-508 COIMBRA

Duration

24 Months

Project Website http://cordis.europa.eu/projects/r cn/110469 en.html

ABSTRACT (Project Objectives & Description of Work)

Periodic preventive maintenance activities associated with aircraft subsystems is a significant part of the high costs associated with through life aircraft operations. Also, the understandably conservative approach to risk management, leads to premature component retirement, which is both highly inefficient and leading to a considerable carbon footprint. Minimizing maintenance costs and carbon footprint are both major concerns within the whole aerospace industry.

If key components such as turbine engines had the ability to robustly, autonomously and continuously evaluate their structural health, and anticipate potential failures, maintenance costs could drastically decrease without compromising the safety and the reliability of the aircraft. This new maintenance paradigm of real-time in-situ health monitoring would eliminate the need for the usual periodic preventive actions, allowing maintenance activities to evolve into a reactive paradigm, with extremely high savings as a result.

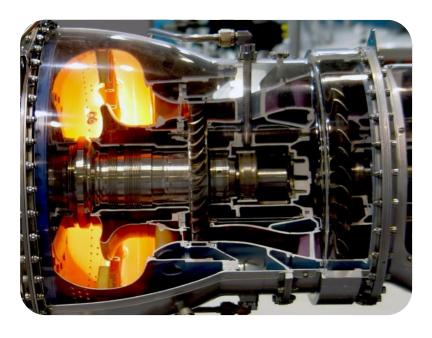
PROJECT RESULTS

In order to provide useful data to optimize the development of each part of the turbo engine, the project aims to develop an innovative telemetry solution for measuring in-situ strain and temperatures of the engine shaft, and transmit energy and data through wireless links. The rotating unit must resist up to 45,000 RPM at 150 °C.

This project involves a single participant







INFORMATION

Contract Number

255877

Theme

CleanSky

Instrument

JTI-CS

Total Cost

77.325 €

EC Contribution

42.898 €

Coordinator EC Contribution

8.644 €

Project Start Date

01-Jan-10

Scientific Coordinator

Rui Venâncio (rui.venancio@gmv.com)

GMVIS SKYSOFT, S.A.

Av. D. João II Lote 1.17.02

Torre Fernão Magalhães, 7°

1998-025 LISBOA

Duration

24 Months

Project Website http://cordis.europa.eu/project/rc n/98054_en.html

ABSTRACT (Project Objectives & Description of Work)

WEMACS proposed a software application able to support the CleanSky Green Regional Aircraft Design phase. The WEMACS software suite is a high-tech, flexible and innovative tool to estimate structural components. The existing know-how on components will provide accurate estimates on structural changes. WEMACS will focus on wings, fuselage pylons and tail of the aircraft. Parameters such as size and geometry, weights and manufacturing costs shall be calculated accurately.

WEMACS will calculate detailed weights for structural items taking baseline information previously obtained by conventional methods. It will also derive updated detailed information about costs to manufacture the aircraft.

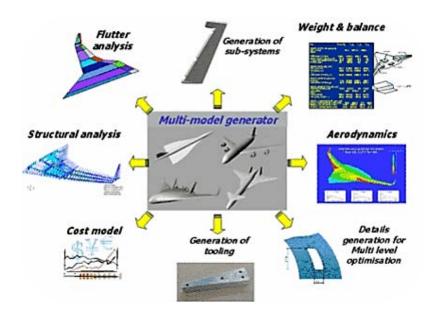
WEMACS is based on Knowledge Based Engineering (KBE) philosophy. KBE is the added innovative component in WEMACS, driving progress in the technological implementation of the knowledge management vision and strategy for the aircraft engineering business.

PROJECT RESULTS

The WEMACS software provides a detailed weight breakdown based on conventional structural technologies for the fuselage, wing, horizontal and vertical stabilizing surfaces and pylons, from higher-level variables concerning mainly aircraft geometry and performance. The tool was also designed to consider new materials, technologies and design solutions for the weight estimation, while also estimating the cost for each component.

SPIN.WORKS LDA – Portugal
TECHNISCHE UNIVERSITEIT DELFT –
Netherlands
KE-WORKS BV - Netherlands







FUEL CELLS AND HYDROGEN JTI

BEINGENERGY

Integrated Low Temperature Methanol Steam Reforming and High Temperature Polymer Electrolyte Membrane Fuel Cell

INFORMATION

Contract Number

303476

Theme

FCH JU

Instrument

CP

Total Cost

4.214.423 €

EC Contribution

2.245.244 €

Coordinator EC Contribution

342.892 €

Project Start Date

01-Sep-12

Scientific Coordinator

Adélio Mendes (mendes@fe.up.pt)

UNIVERSIDADE DO PORTO FACULDADE DE ENGENHARIA DEP. ENGENHARIA QUÍMICA Rua Dr. Roberto Frias 4200-465PORTO

Duration **36 Months**

Project Website http://89.152.245.33/dotnetnuke /beingenergy/Home.aspx

ABSTRACT (Project Objectives & Description of Work)

The aim of this project is to develop a fuel cell power supply prototype that responds or overpasses the requirements proposed:

- Nominal electrical power: 350 We;
- Nominal electrical efficiency: > 35 %;
- Nominal operating temperature: 180 °C;
- Methanol conversion: > 98 % (required by the HT-PEMFC operation);
- Nominal CO concentration on the reformate: < 0.1 %;
- Specific size and weight: < 35 kg·kW⁻¹ and < 50 L·kW⁻¹;
- Start-up time: < 15 min.

To achieve this, the project team shall develop a high temperature polymer electrolyte fuel cell (HT-PEMFC) closely coupled with a methanol reformer, greatly improving the efficiency of the resulting fuel cell. These results target the development of the next generation of combined power supplies.

The main objective of BeingEnergy is to develop improved fuel cell technology. To this end the project set the following objectives:

- Synthesizing, characterizing, and optimizing catalysts for low temperature methanol steam reforming (LT-MSR, 180 °C) and developing strategies for industrial preparation of the selected catalysts;
- Development, characterization and optimization of a cellular reactor for the LT-MSR;
- Integration, characterization and optimization of the low temperature methanol steam reforming reactors with a high temperature polymer electrolyte membrane fuel cell (HT-PEMFC);
- Development, characterization and optimization of the LT-MSR/HT-PEMFC 350 We prototype.

PROJECT RESULTS

The research team developed a Pd/ZnO MSR catalyst with 4 times more activity per active metal loading than the conventional CuO/ZnO/Al2O3 catalyst G66 MR. The CO concentration of the reformate stream is several times smaller when using the new catalyst.

DEUTSCHES ZENTRUM FUER LUFT - UND

TEKNOLOGIAN TUTKIMUSKESKUS VTT - Finland

PARTNERS

SERENERGY A/S - Denmark

RAUMFAHRT EV - Germany

CONSIGLIO NAZIONALE DELLE RICERCHE - Italy

UNIVERSITAT POLITÈCNICA DE VALÈNCIA -Spain

INOVAMAIS - SERVIÇOS DE CONSULTADORIA EM INOVAÇÃO TECNOLÓGICA S.A. - Portugal

RHODIA OPERATIONS - France











