Promoting Innovation in the Industrial Informatics and Embedded Systems—I3E

Newsletter

August 2011 Issue 2

Jointly for our common future

Programme co-funded by the EUROPEAN UNION

I3E focuses on:

- Embedded Systems
- Industrial Informatics

I3E main outputs will be:

- A Strategic Research Agenda
- A Methodology Guide on Innovation

In this issue:

Analysis and Selection of Best Practices

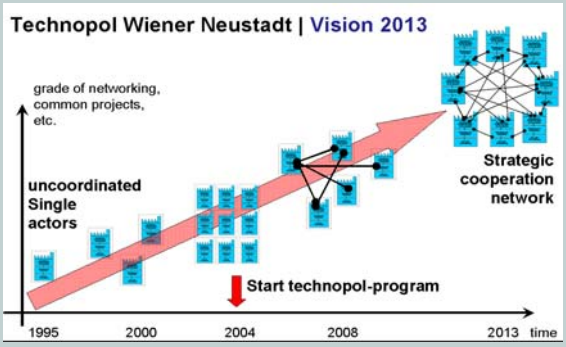
Aiming at the compilation of a Methodology Guide on Innovation the I3E partnership has compiled a database of 120 Good Practices (GPs). These Good Practices have been analysed against a specific methodology, leading to the selection of 30 Best Practices + 2 Reserve Best Practices. The methodology is based on several criteria – financial, impact, realisation, innovation, social, etc. Each criterion brings a certain number of points to each GP. All GPs have been assessed by 3 project partners.

The 30 Best Practices with the highest ranking come from different application areas, i.e. 10 come from the area of industrial informatics, 5 from nomadic environments, 2 from private spaces and 13 from the area of public infrastructures. 2 Reserve Best Practices have also been provided.

Best Practices

Technopol Wiener Neustadt, Austria

In order to bridge the gap between the areas of academic education, industry and R&D the so called "Technopol-program" of Lower Austria was founded in 2004.



The Technopol location Wiener Neustadt focuses on five technology fields a) materials, b) surfaces, c) medical technology, d) processes and e) sensors-actors which are summarized as "Modern Industrial Technologies". In each of these areas at least three independent facilities are engaged with overall staff of at least 30 scientists to build a critical mass.

It is the aim of the Technopol manager to double the amount of scientists from 300 to 600 at the Technopol till 2013 and to build a strong network between the thematic adequate companies, the academic education and R&D facilities.

Technoseed, Italy

Techno Seed is an initiative with the aim of collecting a set of good and innovative ideas in ICT field and make them concrete innovations through the creation of new enterprises thanks to a formation, consulting, incubation path.
In other words, Techno Seed is an enterprise incubator situated in the Science & Technology Park of Udine.
It is has been funded by the Ministry of Economic Development and it is promoted by Friuli Innovazione (a research center) , by University of Udine and by Ires FVG (Economic and Social Research Center).

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- ICT Cluster, Bulgaria
- University of Maribor, Slovenia
- Jozef Stefan Institute, Slovenia
- Regional Development Fund of the Region of Western Greece, Greece
- Italian Executive Alliance, Italy
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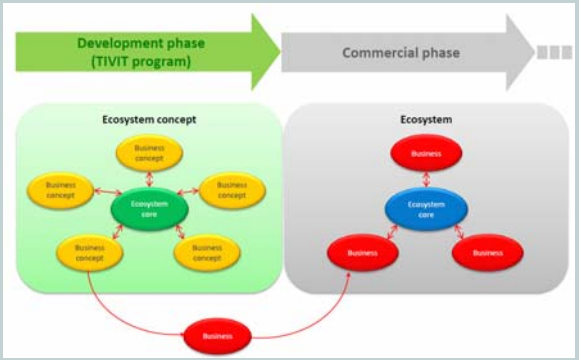
- Odessa National Polytechnic University, Ukraine

TIVIT, Finland

In Finland, in order to foster research and innovation, and collaboration, multidisciplinary Strategic Centers for Science Technology and Innovation are established and involve different sectors of industry and society. Basically, they are organized as non-profit organizations, owned by industrial and academic partners, and a virtual research organization. In their research programs, it is possible to generate sufficient critical mass and combine versatile competences for achieving world-class expertise and global breakthroughs.
Together with shareholders investments, centers are funded by public organizations with annual investments of some €40-60 million.



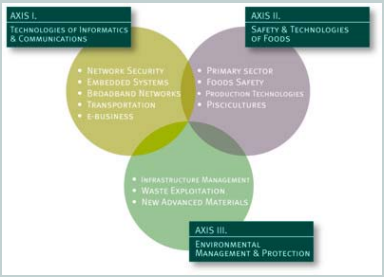
Syrinix, UK

Syrinix is a spin-out company from the University of East Anglia in Norwich. Following almost ten years of research and consultancy in the field of water leak detection and location, Syrinix Limited was created to exploit this expertise. The detection facilitates the prevention of larger leaks and allows the water companies to intervene successfully to prevent the catastrophic failure of pipes and the subsequent loss of water and potential damage to surrounding infrastructure (buildings, roads, etc.).

Syrinix
Leading Pipeline Protection

Syrinix believes that it has the most sophisticated and most sensitive leak detection algorithms available. Its world-class signal processing allows to Syrinix to offer products like the TrunkMinder strategic trunk mains monitoring system.
The detection of small leaks in large mains is just one example of automatically detecting important, often time critical, events in the environment.
Syrinix extended its sensor and signal processing expertise to other products that meet customer needs for similar functionality. A new pressure transient detector, Ptarmigan, spots transient events and returns pertinent information about the event to the pipeline operator.

Regional Innovation Pole of Western Greece, Greece



The Regional Innovation Pole of Western Greece is a union of public and private sector key players in the Region of Western Greece, aiming at the development, promotion and exploitation of innovation in the Region. The pole has succeeded in bringing together universities, technological institutions, research institutions, business support organizations, regional authorities and the entrepreneurial world of Western Greece in the effort to combine abilities and lead to the overall growth of the Region. The Regional Innovation Pole focuses on three axes that represent the areas of strategic importance of the Region of Western Greece: Technologies of Informatics and Communications, Safety and Technologies of Foods, Environmental Management and Protection. The tools that the pole utilized comprise 9 R&D consortia, 4 infrastructure development activities, 3 spin-off companies, 1 technological platform elaboration, 1 educational / training course elaboration, 6 horizontal activities for the development of tools and methods for the pole viability.

Sirma Young Spirit, Bulgaria

Sirma Young Spirit (SYS) program is designed to help young entrepreneurs in the field of Information Technologies (IT) and provide them with seed investments, which represent the earliest stage in the chain of venture funding. The SYS program is key part of Sirma's strategy to look for new business ideas and to seek, promote and develop innovations.
Sirma Group is the largest private Bulgarian group of IT companies. It was founded in 1992 and now includes 18 subsidiaries and associated companies operating in different areas of IT. During 17 years of successful growth the group has accumulated a substantial capital of unique technologies, goodwill, technical and business expertise. Sirma has always searched for good ideas and our success largely results on the ability to find good ideas and drive them into successful business enterprises. The SYS program is a natural continuation of the company's internal R&D and investment processes.

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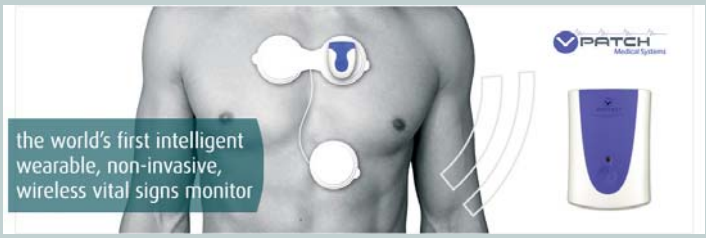
Intelesens, UK

Intelesens is an internationally recognized, leading innovator in targeted non-invasive vital signs monitoring. Intelesens was incorporated in August 2000 (with Enterprise Equity leading an investment of £1.7m into the company in May 2005) by 3 leading scientists as a University of Ulster spin-out company, thereby ensuring the continued identification and design of world beating new products.



Intelesens develops and manufactures its own products and also designs products for OEMs. Further to products that have been developed specifically for medical device partners, Intelesens has developed their own range of patented products.
The company's strengths lie in non-invasive wireless medical devices combined with medical sensors and electrodes.

Cardio & Brain Signals—BRACCIA FP6 Project, Slovenia

The Cardio & Brain Signals was developed by joint effort of several research institutions under the 6th framework project BRACCIA. The development team was funded by the EU and Slovenian research and development agency. The main goal was to design and develop a new system for data acquisition, where the main stress would be on signal conditioning and high quality AD conversion, as well as, the instrument had to be easy to use and operate. The approach was to build an instrument as an embedded system, with soft-core programmable processor, which would process data from high end audio AD converters and send them to the standard PC via USB. The system was successfully used for a number of measurements on humans and rats during anesthesia under the project BRACCIA. Lately the system is also used by other research institutions for their specific use. More specifically the system was recently used at the Faculty of Arts, at the University of Ljubljana in a study, where cognitive functions were monitored during a mental task.

Corallia, Greece

Corallia Clusters Initiative is an initiative that aims at the development of innovation clusters in high technology sectors that present high potential to increase their competitiveness, improve their position in the global market and adopt a model for the provision of high added value services.

Taking into account that clusters provide a powerful tool for economic development, Corallia has placed its emphasis in the transformation of the Greek economy from the "low labor cost economy" model to the "high added value service" model focusing on knowledge economy.
Corallia has been funded under the Greek Operational Programme Competitiveness and has already led to the development of mi-Cluster, a cluster in the sectors of nano/micro electronics and embedded systems with over 100 organizations coming from the industry, academia and research world all over Greece.

KIBERsik, Slovenia

KIBERsik is part of the KIBERnet family designed to meet demanding challenges of the future SmartGrid technologies. The system KIBERsik will be built and demonstrated at four industrial consumer sites. It will enable lower energy bills and efficient use of energy. KIBERsik was developed by research teams of INEA, Jozef Stefan Institute and Faculty for Electrical Engineering in Ljubljana. The project is co financed by the European structural funds and Slovenian Ministry of Higher Education, Science and Technology.

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Competence Brokering, Norway

Research-based brokering is a sub-programme of the programme Mobilization for R&D-related innovation (MOBI), organized by the Research Council of Norway. It has two equal goals: To promote greater focus on R&D activity in companies with little or no R&D experience in order to increase their internal innovative capacity, thereby enhancing value creation and competitiveness (stimulation of R&D demand). To strengthen the role of the research institutes as partners in collaboration with industry (stimulation of R&D supply). Through organization in regional coalitions, competence mediators should contribute to an increased awareness of the possibilities and potential offered to regional development by research. The main R&D focus areas are biotechnology, energy/petroleum, environment, medicine/health, polar research, social sciences and large scale programs (national basis), regional development, agriculture, farming, marine sectors/ fisheries/aqua culture, entrepreneurship and new business development (regional basis). The most important measures the "Competence Broker" has taken are to educate competence brokers, identify SME research needs, make a match between them with relevant local research outputs and follow-up projects.

EuroGPS Safe Drive, Bulgaria

ICOM Ltd. is a leading Bulgarian technology provider specialized in the field of telematics, ITS, and LBS for the corporate and consumer markets. The company designs, develops, and manufactures advanced GPS tracking, vehicle control and vehicle fleet management, electronic toll collection, and LBS products and solutions under the trade name "EuroGPS". The EuroGPS SafeDrive - is a GPS-based vehicle speed monitoring and alerting system with a state-of-the-art centralized POI management, and automatic Web-based POI database distribution and update into the plug-and-play GPS devices. The GPS alerting devices make real-time calculations about the exact geographic position, speed and direction of your vehicle and warn you with voice and visual alerts about approaching different POI's (accident black spots on the roadway, speed cameras, etc.) .

The first 2 phases of the creation of EuroGPS SafeDrive (research and development) were co-funded by the "National Innovation Fund" of the Bulgarian government, managed by the The Bulgarian Small and Medium Enterprises Promotion Agency (BSMEPA).

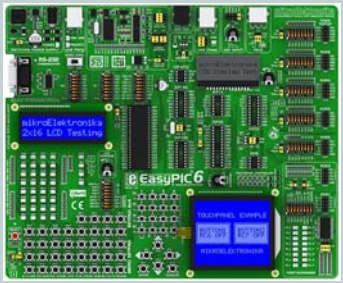
Mobile Asset Management Platform, Austria

The industrial partner keeps and provides centralized geospatial information data such as transfer information, switch point information, plot information, customer information and much more in a Geospatial Information System (GIS) as part of a Network Information System (NIS). This system is used by the Telekom Austria TA AG for all of Austria as field of activity.

The idea of this project is to provide field force agents with a part of this information out of the GIS to alleviate their work and shorten their overall lead time. For the benefit of the field agents and the customers and therefore for the whole company.

This information will be provided in form of a web application in well-defined information layers and intuitive user controls. The web application grants access with common smart phones, which are already used by most companies in the field.

MikroElektronika, Serbia



Founded in 2001, MikroElektronika (with 40 employees) produces now a wide range of development tools, compilers and books for PIC, dsPIC, AVR, 8051, ARM and PSoC microcontroller families.

The company headquarter is located in Belgrade and production facilities in Lajkovac, Serbia.

The production facilities of MikroElektronika are equipped with true hole and SMD (surface mounting device) assembly technology. These two production lines enable the company to manufacture first class products with complete hardware and software solutions accompanied by printed manuals.

MikroElektronika is Microchip, Atmel AVR, Atmel 8051, Cypress PSoC and NPX ARM third party partner, as well as Telit Competence Center.

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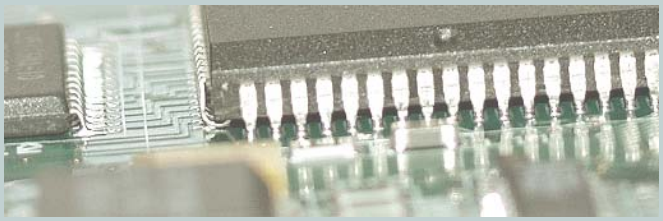
PFAU, Germany

Zentrum für Innovation und Technik in NRW

Technology-based and know-how based SMEs are important in the modernization of the economy. Start-ups from universities and spin-offs from research centers and scientific institutions can be a significant factor. Entrepreneurs from universities base their business ideas more on recent R&D results. Thus the promotion of start-up activities from universities and R&D institutes is an instrument that speeds up technology transfer from the science to the business community. The main promotion goal is to develop innovative products, processes and service ideas into a marketable product or service by using existing state-of-the-art facilities at the universities and R&D centers (laboratories, equipment, ICT infrastructure). The program targets graduates from universities and researchers whose last university degree (diploma or PhD) was completed at the latest three years prior to application. The program offers a financial stimulus on a monthly base in order to support graduates in the option of "Starting your own business". The maximum duration of the funding is 2 years. Additionally, the start-ups are given a kind of "pocket money" to upgrade business skills and make their first investments in equipment. The program was developed and is financed by the Ministry of Innovation, Science, Research and Technology in North Rhine Westphalia.

Spin-off Foundation, Austria

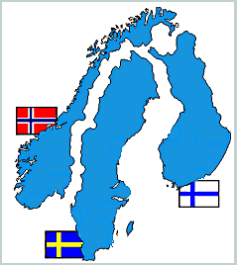
A successful foundation of a spin-off company from a university based research group including the transformation of research results into products. Key success factors are the way how the relationship between the company and the university has been preserved to jointly pursue the research and product lines, the stable financing with own capital and the mutual benefits for both parties. For the continuous success also the broadening of this initial relationship to other academia was important to cover different research needs.



The best practice is located in the niche-market for design and development of embedded systems for industrial electronics and similar conservative markets. Having a market allowing for long term customer relations and development is an important pre-requisite for the success.
The continuous success and growth over almost the whole last decade shows the success of this concept.

NORDITE Program, Scandinavia

NORDITE program for funding of research in the area of embedded systems is being issued on behalf of VINNOVA Sweden, the Research Council of Norway and Tekes, Finland. The program is designed to promote increased co-operative research in the fields of technology development for shortwave radio, wireless sensors, short range wireless networks and RFID or MEMS utilizing RF technology and to assist Swedish, Norwegian and Finnish research institutes and companies to further develop and demonstrate their technical expertise in that area. It had been realized in a form of two calls for projects funded by national funds in the sum of app. 15 million EURO.



NORDITE program was running from 2005 to 2010. Results have been presented in yearly conferences. In November 2009, the final NORDITE2 Conference was held in Helsinki, Finland. It was organized by Tekes, VINNOVA, and RCN. In the conference, NORDITE2 projects were presented. With this event, the NORDITE initiative was successfully concluded.

Virtual Manufacturing Support, Serbia

Virtual Manufacturing Support for Enterprises in Serbia was implemented within EDEP programme "Support to Enterprise Development and Entrepreneurship Program" with realization period from December 2006 to September 2007. Results achieved by implementing this project are:

- Foundation of Centre for Virtual Manufacturing at Faculty of Mechanical Engineering in Kragujevac
- Foundation of virtual manufacturing user network – VMnet, and collaborative Web portal for efficient network support
- Completed 2 Pilot projects with selected enterprises, members of VMnet network
- Seminars and Workshops

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UltraSOC, UK

UltraSoc Technologies (UST) was founded in 2006 as a spin-out from the University of Kent and became a joint spin-out with the University of Essex to exploit the research carried out by a University research team. The company aims to develop and market UltraDebug TM, a highly flexible, multi-processor, System-on-Chip (SOC) debug support platform. UltraDebug TM will provide superior, application-level, debugging facilities, enabling the embedded systems industry to create more advanced and reliable products in markets such as automotive and consumer devices.

IMS-BAS, Bulgaria

IMS-BAS offers integrated technological complex to create high-quality castings of nonferrous alloys casting method with gas pressure (CPCM). Management processes are implemented based on microcontrollers. The development is the result of collaboration of Foundry Institute, Aachen Germany, MAGMA GmbH and Foundry Institute, Krakow, Poland, IMS-BAS. Financing of the project is under the program "Copernicus", entitled "Use of numerical simulation to obtain high quality castings from casting a gaseous pressure" (under contract CIPA-CT94-0156).
As a result the customer receives a machine, equipment and technology to ensure high quality products at high productivity, reduced energy consumption and metal and compliance with modern environmental standards.

Technology Park of St. Petersburg, Russia

Technology Park of St. Petersburg State Electrotechnical University "LETI" - TPEU was created in 1991. The purpose of the Technology Park is to create conditions favorable first of all for the organization, development and activity of small innovation structures (small firms), secondly for the accelerated industrial development of scientific research and design works, inventions and discoveries made by scientists, teachers, postgraduates and students of LETI, and at last for creation of competitive technologies, products and services and bringing them to consumers on a commercial basis.

SLALEN Innovation Centre, Ukraine

Innovation center SLALEN - is a public non-profit organization specializing in innovation management and technology transfer, IPR protection, evaluation and promotion of innovations, established in 2006 with the support of Co. Ltd Domstroy, Dnipropetrovs'k. The main aim of IC SLALEN – is to attract funding for innovative ideas, engineering and to take them to internal and external market. IC SLALEN uses in their work approach, based on supporting the chain "theorist – researcher-practitioner – researcher-engineer – technologist-production worker – marketing – seller" and at the same time luring in this process administration, press, bank and auxiliary manufacture. The main result of IC SLALEN practice is obtaining innovative products and implementation of scientific developments in the production made by our scientists and researchers from Dnipropetrovs'k and other Ukrainian regions.

Vlatacom, Serbia

After the market demand for handheld document readers has been recognized and analyzed, the VDR-Handheld project has been started and run with Vlatacom's own resources and finances with objective to keep a competitive edge and stay ahead of competition, as a recognized designer and manufacturer of machine-readable travel document (MRTD) readers.
The aim was to develop and offer to the market, in shortest possible timeframe, a handheld, battery operated, ruggedized device for verification of travel and personal documents, reading of biometric data and identification of persons holding these documents, including the specialized optical scanner for e-Passport full page scanning with white, infrared and ultraviolet illumination, suitable for integration in such handheld device.
The process involved four stages: first stage was research based on existing components and modules, second stage was research which included HW, SW and algorithm test environment development, next stage was feasibility study ending with successful functional model, and finally fourth stage was final product development stage ending with successful device prototype .

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Inland Automatic Identification System (AIS), Croatia

Implementation of AIS network on the Croatian section of the rivers Danube and Drava, started in March 2006 and ended in March 2008, done by CRUP Ltd. Implementation was 90% co-funded by the European Union in the frame of INTERREG IIIA Slovenia-Hungary-Croatia Neighborhood Program; the rest 10% being local funding. Main objectives were improvement of cross-border mobility and accessibility in the border region on the Danube and Drava waterways and the development of accessible ICT technology that will have a future use in social and economic life of the defined area. Target groups were public authorities dealing with the inland waterway transport, navigation safety and environmental protection, as well as private sector involved in inland navigation such as ports, freight forwarders, fleet operators etc. Results were improvement of cross-border traffic and transport management, increase of safety and efficiency of inland navigation as well as making inland navigation more environment friendly type of transport.

Basilicata Innovazione, Italy

Basilicata Innovazione has been developed thanks to an accord between the regional government and AREA Science Park, the science and technology park of Trieste, signed in June 2009 with the aim of providing the regional territory with a permanent body useful to give services and instruments to sustain the enterprises competitiveness and to valorize the research. The accord allowed to transfer into Basilicata Region a model successfully tried by AREA, able to integrate and create a system with the realities already present and active: excellent research centers and dynamic productive companies, especially SMEs. Public funds (community, national and regional) have been used as financial resources. The initiative offers to the regional companies a direct point of access to the international applied research state of the art, to find skills, partners, funds and assistance useful to realize product, process and management innovation projects. The expected results are creation of new enterprises, increase of employment and regional economic development.

Energy Harvesting, Austria

Within the Austrian funded FIT IT Embedded Systems project ECO-SENSOR, project partners (Profactor, Pöttinger, University of Linz, Exler Elektronikentwicklung) break up the critical dependency of remote wireless sensor networks from traditional battery technology. Based on the concepts of retrieving electrical energy from vibrating machinery and enabling ultra-low power wireless transmission of arbitrary sensor information, the design of this embedded modular base unit opens a variety of technological challenges going far beyond state-of-the-art. Since ECO-SENSORs are energy-autonomous, no additional energy has to be provided for both, sensing operation and wireless transmission. The ECO-SENSOR project (i) enables the reliable integration of dense wireless sensor networks for optimal condition monitoring and process control, (ii) accelerates engineering and integration times by totally eliminating wiring efforts, (iii) increases operational machining safety, (iv) dramatically reduces machine break-downs and maintenance costs and (v) allows for accessing sensors in otherwise not reachable areas.

TrackGPS, Romania

Following the experience with international prestigious companies, AROBS started developing a series of software solutions for the local market: sales force automation (SFA) on PALM and PDA's (Optimall by Arobs), GPS/GPRS (TrackGPS) fleet tracking / monitoring systems and tourism applications (ATOS/ABOS). TrackGPS Business, the fleet tracking / monitoring system, has been the most successful one – because of the growing necessity to make the fleet activities more efficient. TrackGPS Business, the vehicle tracking system, is helping thousands of fleet owners to drive down operating costs and increase earnings. It offers live vehicle tracking, fleet maintenance and risk management information to fleet operators of all sizes. There are over 500 companies with vehicle fleets in Romania that experience the benefits of reduced costs and increased productivity. Over 9,000 vehicles of all types are being monitored at the moment.

SOUTH EAST EUROPE
Transnational Cooperation Programme

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Vacuum pressure control, Austria

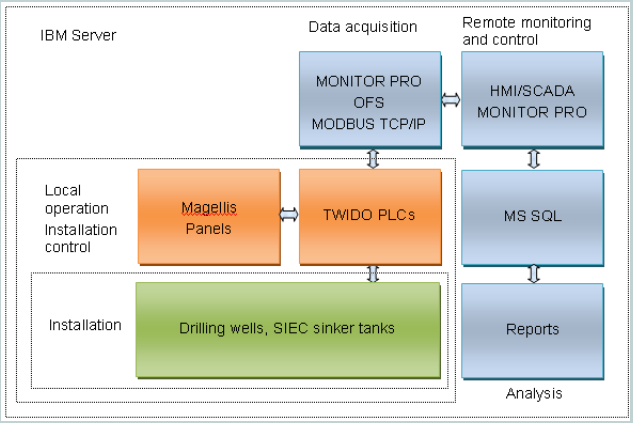
The 6th EU FW project Connect aimed to the research and development of the advanced platform for predictive control. After its development, the platform was evaluated by using it in several case-studies for different control problems at end users from project consortium. Case-studies and resulting prototypes for end users therefore represent further partial results of the project Connect. One of the case studies was the control system for plasma machine and it was developed by the Jozef Stefan Institute, the Department of Systems and Control for the company Plasmalt, Austria, which produces the machines. Both partners were members of the project Connect consortium, the first one as RTD provider and the second one as end user. The research and laboratory prototype development of the vacuum pressure control system was performed and funded within the project Connect, while the final implementation was funded by Plasmalt directly.

Frozen Food Temperature Monitoring, Austria

As of January 1st, 2010 the owner of a catering or gastronomy company has the obligation to record the temperature of his short-life food products during transportation and storage without a gap and has to keep the recordings for more than a year.
The challenge was to develop a concept and a functional model which retrieves temperature readings from temperature sensors in refrigerating plants, analyze the recordings for eventual abnormalities to generate an alarm and archive the recordings in a database for a continuous report.

Water Well Network, Romania

Successful implementation of a project resulted from the collaboration between local authorities and governmental authorities, the funding of the project being supported by EU grants and co-financed by the local authorities from Satu Mare, Romania.
The objective was to extend the infrastructure regarding the drinking water, due to the population growth that was not anticipated when the existing infrastructure was first developed. The approach was to rehabilitate the water wells network for water collecting and to create a system for the monitoring and control of the whole process, with the purpose of increasing the capacity of delivering the raw water to the Station for the Treatment of Drinking Water, which delivers drinking water to the city and to the surrounding smaller towns.



The results of the successful implementation of the project were the assurance of a minimum flow of 1200 m3/h and a substantial improvement of water quality delivered to the Treatment Station, by reducing the suspensions in the water.

Automated Footwear Production, Italy

This Best Practice describes how a whole industrial sector (footwear sector) can be totally re-designed and improved with the support of technology and innovative ideas that redefine both productive processes and products. It, besides, shows that these initiatives are realizable with a strong cooperation between research, public investments and entrepreneurial initiative.
The practice describes the creation of a pilot plant where new innovative and high technological equipments, tools, systems and processes, have been tested with the aim of raising the innovation level of the whole footwear sector.

Flap type wavemaker, Bulgaria

The "Flap type wavemaker" project was implemented in partnership with the Bulgarian Ship Hydrodynamisc Centre (BSHC). The funding was provided by the Centre in the form of assigned scientific and development task to AMK Ltd. The specificity of the assignment needed innovative approach, in order to achieve the expected result and engineering effect. The involved specialists from AMK Ltd. worked in close cooperation with their colleagues from the Institute and together came to certain conclusions, which later on, laid the foundation of the innovation.
AMK Ltd. and the Centre implemented the developed innovation successfully and managed to put it into practice in a real working environment.

Newsletter

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Scheduled Events

- Project Meeting, Belgrade, Serbia, October 2011
- 6th Project Workshop, Belgrade, Serbia, October 2011

Upcoming Events

- 7th Project Workshop, Patras, Greece, Autumn 2011
- Project meeting, Odessa, Ukraine, Winter 2011-2012
- International Conference, Greece, Spring 2012

Check our web portal regularly for our project news, events and deliverables