	I3E ***South East Europe TCP***

Best Practice Report

Regional Innovation Pole of the Region of Western Greece

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Everybody please state revision index and short description of what has been done + partners involved and date.

Final approval	Name	Partner
Reviewer		

1. Best Practice Title

Regional Innovation Pole of the Region of Western Greece

2. Location of Best Practice

Country, region, town

Greece, Western Greece, Patras

3. Best Practice Executive Summary

Describe briefly (max 10 lines) the GP context (partnership, funding, objectives, approach followed, results)

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.

4. Best Practice Classification

Best Practice Theme

☒ *Research Transformed to Innovative Product*
☒ *Research Transformed to Innovative Service*
☐ *Research Transformed to Innovative Methodology*
☐ *Research Transformed to Innovative Production Process*
☒ *Financial Mechanism for Transformation of Research to Innovation*
☒ *Support Mechanism for Transformation of Research to Innovation*
☐ *Other (describe)*

Best Practice Research / Application Areas

☒ *Industrial / Manufacturing Systems*
- ☒ *Industrial Informatics and Communications*
- ☒ *Intelligent Devices*
- ☒ *Distributed Control Systems*
- ☒ *Flexible Manufacturing Systems*

☒ *Embedded Systems*
- ☒ *Industrial Embedded Systems*
- ☒ *Nomadic Environments*
- ☒ *Private Spaces*
- ☒ *Public Infrastructures*

5. Description of Best Practice

5.1 Best Practice Context

Overall background of the Best Practice. Location, socio-economic, technical & policy background of the BP (max 10 lines)

The main objective of the Regional Innovation Pole is to organize and strengthen bonds between

academia/research and the entrepreneurial world with a focus on the enhancement of the technological and innovation performance of the Region of Western Greece. The Pole has a clear business orientation and the special objectives to utilize the existing concentration of enterprises and research organizations of the Region towards a medium term strengthening of the regional growth and competitiveness and overall presentation of the Regional competitive advantages. The overall pole activities are built around three axes namely Technologies of Informatics and Communications, Safety and Technologies of Foods, and Environmental Management and Protection, being three strategic axes for the Region of Western Greece. One important success of the Regional Innovation Pole was that it brought together all key players in the Region in a common effort to align their overall activities towards common goals and towards developing a critical mass that can in the medium and long term lead to the enhancement of the competitiveness of the Region. The Innovation Pole resulted in the creation of 11 R&D projects, 4 infrastructure development or strengthening activities, 3 activities relevant to standardization and exploitation of results, 1 technology platform, 1 education/training activity and 6 horizontal activities that comprise development of the innovative and technological identity of the Region, a business plan for the continuation of the pole, technology foresight of the Region, a tool for know-how and innovation transfer, a business angel network and a quality observatory.

5.1.1 Policy Elements

What are the policy initiatives that have influenced the contextual environment of BP: innovation promotion policies, research funding policies, certification ect as well as relevant tools (max 10 lines)

In view of the globalised competition, that businesses face, innovation represents a critical factor for the promotion of their competitiveness. Innovation represents the transformation of a research result or of an idea to a new or improved product, service or process. Despite the globalization of entrepreneurship and the research potential in the big industry, research and innovation continue to thrive largely due to SMEs and the collaboration between businesses and research and academic institutions. Policies that establish such collaborations at a local or regional level, or that encourage synergies between the different stakeholders in an area, contribute to an increase of the area visibility at an international level as well as to the permanent collaboration between otherwise competing stakeholders leading to overall growth in an area.

Regional Innovation Poles (RIP) represents such a policy element. This policy can contribute to the overall increase of innovation records at a regional level leading to convergence with the European average and leading to an increase in the overall competitiveness and growth of a region. A relevant Greek policy has been elaborated by the General Secretariat of Research and Technology of the Greek Ministry of Development which has been currently absorbed in the Ministry of Regional Development and Competitiveness. This policy has been integrated in the Operational Programme Competitiveness 2005-2008, under the action “Creation of Regional Innovation Poles”. Five different Regional Innovation Poles have been funded under this policy, in the regions of Western Greece, Western Macedonia, Thessaly, Central Macedonia and Crete. The selection was based on criteria of existing technological excellence in the aforementioned regions.

From the Ministry of Development point of view, the policy associated with the creation of Regional Innovation Poles derives its importance from

- the need to reduce regional inequalities through the competitive advantages of the regions
- the need to promote the decisive role of the private sector in the growth and increase of competitiveness of the country
- the challenges that the private entrepreneurship faces both with reference to technological innovation and its application in enterprises and the global level of competition
- the importance of the regions in the quest to effectively support innovation policies
- the need to align the research efforts of enterprises, research centers, and academia towards common research goals

The Region Innovation Pole of Western Greece is a union of the public and private sector institutions, with an aim to support technological excellence and innovation in the Region of Western Greece and increase the overall competitiveness of the regional economy. The institutions that participate are universities, technological educational institutions, research centers, technological and science parks, industries, chambers, local development companies, small to medium-sized enterprises (SME) and third party organizations that could facilitate the enhancement of innovation in the Region.

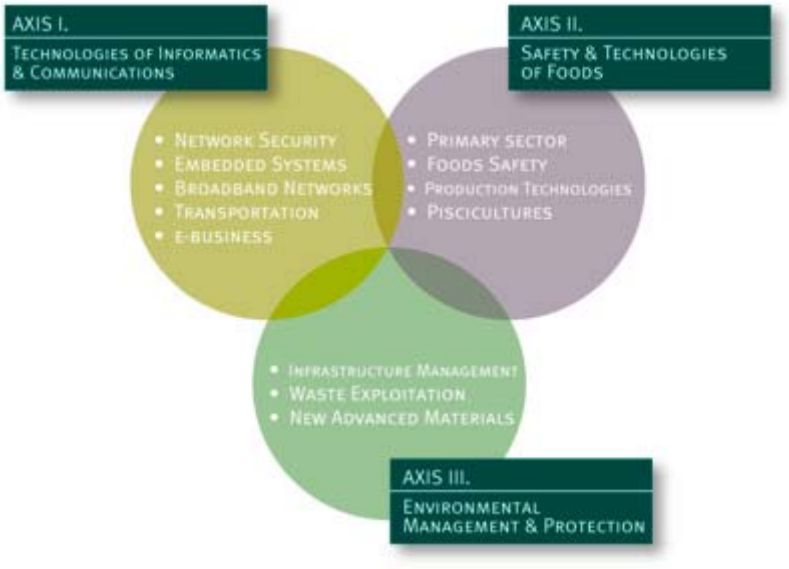
5.1.2 Socio-economic & Other factors

Other contextual factors such as customer / target market addressed, international validity, customer density, economic conditions, customer values, research area addressed (max 10 lines)

The Region of Western Greece has elaborated a strategic development plan identifying the strengths, weaknesses, opportunities and threats for the Region. Part of this plan is associated with the strategic axes that the region views as significant for its future development and growth. These axes comprise Information and Communication Technologies, Food Technologies and Safety, and Environmental Management and Protection.

A major strength of the region is the academic potential as identified by the existence of 3 Universities, 2 Technical Universities and 3 Research Centers. All these academic and research institutions produce the necessary critical mass of highly educated professionals that could support innovation in the region. In fact part of this potential remains in the Region employed by SMEs and industry. Further promoting entrepreneurship and employment opportunities in the Region is quite important for the better exploitation of this potential and for increasing the percentage that remains in the region.

The Regional Innovation Pole of Western Greece built on top of this Strategic Plan and actually comprises the same three axes. It has identified sub-themes per axis in order to facilitate its interventions.



5.2 Objectives

Aim of the project, specific objectives & strategies to achieve these objectives (max 10 lines)

The main objective of the Regional Innovation Pole of Western Greece is to enhance the bonds and liaison between academia and research institutions from one hand and industry and SMEs on the other hand, focusing on technological excellence and the promotion of innovation in the aforementioned three thematic axes. A union of organizations and enterprises has been created in

the framework of this project aiming at increasing the overall competitiveness in the region through the increase in technological excellence and innovation.

The Region of Western Greece has achieved scientific and technological excellence with referenve to the Regional Innovation Pole strategic axes, which is distributed between different organizations including academic institutions, such as the University of Patras and the Greek Open University, research institutions, such as the Computer Technology Institute, the Foundation of Research and Technology and the Industrial Systems Institute, as well as technical universities. On the other hand, several innovative enterprises reside in the Region of Western Greece. Collaboration between all these organizations has been proven temporal and on a project basis. It is a challenge to create permanent collaboration schemes that could contribute to the overall enhancement of innovation. The aim of the Regional Innovation Pole of Western Greece is to help towards this evolution promoting development of the region through the triangular relationship of Education / Knowledge with Innovation and Entrepreneurship.

The objectives that have been set by the Regional Innovation Pole of Western Greece are the following

- Alignment of all the research potential of the region coming either from the industry and enterprises, or from research and academia towards common research and technological goals in the Regional Innovation Pole thematic axes through the implementation of 24 relevant research and development activities. This short term goal will help all these institutions come together and collaborate towards their common goals and towards the overall development goals of the Region of Western Greece.

- Enhancement of the role of the private sector in the overall development and enhancement of competitiveness of the country. This medium term objective aims at addressing different challenges ranging from technological excellence and innovation, to the dissemination of innovation, and to the cost of innovation. These challenges are certainly viewed through the overall goal of making the private sector strong enough to face global competition.

- Highlighting of the special competitive advantages of the Region of Western Greece as a medium term objective and reducing regional inequalities as a long term objective. By focusing on the enhancement of technological excellence in the Region of Western Greece, the overall competitiveness and growth of the Region will be positively influenced in the long term.

6. Process

Describe the project including key concepts and the overall approach followed. Indicate project end users, target market, main project phases, problems encountered and solutions, problem resolution (max 10 lines)

Following the international experience, the Greek Ministry of Development designed a policy for the creation of Regional Innovation Poles. This policy would be funded under Operational Program Competitiveness with an aim to create five Regional Innovation Poles in Greece that would facilitate innovation and the transformation of research results into innovative products and services. An open call for proposals has been issued by the General Secretariat of Research and Technology.

Following this call the Region of Western Greece took the initiative to set up a regional partnership that would answer this call and would succeed in the goal of establishing a Regional Innovation Pole in the Region of Western Greece. In this context a call for expressions of interest was issued to the different stakeholders in the Region that called for individual project proposals that aimed either at creating research synergies between regional stakeholders and support promising research results towards their transformation to innovative products, services or processes, or at horizontal activities that would support innovation at a regional level. A large number of project proposals was received by the different regional stakeholders and a first evaluation was made by the Region of Western Greece narrowing the selection to a reduced subset.

A working team was set up under the supervision of the Region of Western Greece, led by the Patras Science Park that undertook the role of coordinating the partnership towards drafting a successful proposal. The first step in this procedure involved elaboration of the successful project proposals by

the associated partners and a second round of evaluation taking into account the potential that each proposal would bring to the pole as well as its anticipated impact.

Finally, a union of organizations was formulated led by the Patras Science Park, which comprised all stakeholders participating in the different pole activities. This union drafted under the supervision of the Patras Science Park the project proposal that was finally submitted to the General Secretariat of Research and Development. Following the submission an open evaluation of the different proposals took place, which led to the establishment of the Regional Innovation Pole of Western Greece as one of the five funded poles in Greece.

6.1 Project Design

Project design based on targeted market complete understanding, project structure, policies and procedures, management and implementation actions (max 10 lines)

The Regional Innovation Pole of the Region of Western Greece built upon the Strategic Development Plan of the Region of Western Greece with reference to the strategic thematic priorities of the Region. It thus identified three different thematic axes namely:

- Information and Communication Technologies
- Food Technologies and Safety
- Environmental Management and Protection

Twenty four different activities have been selected and implemented in the framework of the Regional Innovation Pole. The partnerships behind these activities comprised 47 stakeholders plus 9 collaborating organizations.

The 24 activities were classified according to the following scheme

- Research and technological development consortia in priority sectors at a regional level

  Nine (9) such consortia have been selected with different themes relevant to the above axes:

  A1. Development of a Regional Distributed Intrusion Detection and Information System for SMEs in issues of Information Systems Security – GO-SECURE

  A2. Interactive customer services supply system

  A3. Infrastructure and Development of Broadband Application Services Provision in the Region of Western Greece

  A4. Integrated system for international combined transport using smart containers

  A5. Development of research activities of the laboratory for mycotoxins determination aiming at the improvement of competitiveness of the food industry in the Region of Western Greece

  A6. Integrated system for quality certification of aquaculture fish products and their relation to seawater pollution

  A9. Innovative Action for Plastics and Composites

  A10. Innovative intervention tools for infrastructures and environmental impact management

  A11. Development of a viable solution for the management of olive mill wastewaters with emphasis on valorization of byproducts

- Strengthening the infrastructures of public research and technological organizations

  Four (4) such activities have been selected

  C1. Laboratory for enhancement of the computer system's security- GO-STRENGTHENED

C2. Establishment and function of an accredited laboratory of determination of mycotoxins (aflatoxins and ochratoxins) in food and agricultural products

C3. Supplement of required laboratory equipment for performance of quality certification in livestock breeding, agricultural and fishery products with use of integral analytical tests

C4. Infrastructure for the development of a viable solution for the management of olive mill wastewaters with emphasis on valorization of byproducts

- Activities in preparation of assistance to research units in connection with the standardization and commercial exploitation of research results

  Three (3) such activities were included in the Regional Innovation Pole

  D1. Preparation for the commercial exploitation of a Boundary Element software

  D2. Preparation for the Commercial Exploitation & Development of a Medical Decision Support System in Obstetrics

  D3. Preparation for the Commercial Exploitation of a Biological Filter for Potable Water

- Regional Technological Platforms

  One (1) such activity has been included in the Regional Innovation Pole

  E1. Technological platform for the promotion of applied research in the areas of industrial systems and automation, industrial control, embedded systems and information system and network security

- Education – Training

  One (1) such activity has been included in the Regional Innovation Pole

  F1. Confrontation of security incidents, security strengthening and data retrieval - GET-INFORMED

- Horizontal Activities

  Six (6) such activities have been included in the Regional Innovation Pole

  HA 1: Innovative and technological identity of the Regional Innovation Pole of Western Greece and its promotion and dissemination activities in Greece and abroad

  HA 2: Development Plan of the Regional Innovation Pole in Western Greece

  HA 3: Technology Foresight in the Region of Western Greece

  HA4: METAGNOSIS: A tool for the optimal exploitation of the research and technological results and transfer of know-how and innovation in the Region of Western Greece

  HA 5: Integrated network for business support services addressed at existing and new firms, with the aim of promoting innovative activities in Western Greece – FANOS

  HA 6: Observatory of Quality and Entrepreneurial Excellence

An umbrella activity was relevant to the necessary management and coordination of the overall project of the Regional Innovation Pole.

6.2 Project Management

Activities relevant to project coordination and management, project documentation and reporting, quality control, validation and verification (max 10 lines)

The main management bodies of the Regional Innovation Pole of Western Greece are the following

- Board of Directors: a five member body comprising representatives of the major stakeholders in the Region of Western Greece

- Coordinating Partner: the Patras Science Park was the coordinating partner of the Regional Innovation Pole of the Region of Western Greece. The President and CEO of the Coordinating Partner was the overall Regional Innovation Pole Project Manager.
- Management Unit: a three member unit operating under the supervision of the coordinating partner and comprising the project coordinator, the financial administrator of the project and the manager of the Pole horizontal activities
- Advisory Scientific Committee: The main objective of the Advisory Scientific Committee is to scientifically support and guide the activities of the Regional Innovation Pole, to help and assist the implementation of all activities and tasks, to provide advice to the partnership. The main role of the committee is mainly advisory towards the Board of Directors.
- Partner Assembly: The partner assembly comprises one representative per partner of the union of the Regional Innovative Pole of Western Greece. The role of the assembly is to deal with potential problems of the pole as well as of the different partners of the Pole. The assembly suggestions are grouped and submitted to the Board of Directors.

Further to the above bodies that deal with the overall management of the Regional Innovation Pole of the Region of Western Greece, the management of the individual activities of the Pole was undertaken by activity partnerships. The management and implementation units of the activities are the following

- Task Managers: They belong to the coordinating partner of the individual Regional Innovation Pole activities and cooperate with the Management Unit of the Regional Innovation Pole. Each Task Manager is responsible for the coordination of the individual activity of the Pole that he/she coordinates.
- Task Working Group: The Task Working Group comprises one representative per partner participating in the individual activity along with the Task Manager. It is responsible for supervising the progress and implementation of the individual activity along with the Task Manager.
- Task Group: The task group comprises the broader team which consists of researchers and personnel that implement the task.

6.3 Project Implementation

Main elements associated with the project implementation. Realization of new idea, or new technological realization or improvement / novelty to known technology and means to achieve this. Innovation associated with the project realization in terms of new products, services, methodologies. Marketing, advertising and customer service. (max 10 lines)

The Regional Innovation Pole of Western Greece comprises 24 activities that were classified into six categories depending on their nature:

- The Research and technological development consortia in priority sectors at a regional level represent individual projects that undertake specific research and development tasks in the framework of the pole. Nine (9) such consortia have been selected with different themes relevant to the above axes:

  A1. Development of a Regional Distributed Intrusion Detection and Information System for SMEs in issues of Information Systems Security – GO-SECURE

  The goals of activity A1 are:

  1. The development of a regional distributed intrusion detection and notification system for the regional SMEs regarding the spread of viruses and the elaborating efforts for attacking from hackers as well as ways to confront them.

2. The provision of advises and «first aid» to the SMEs through the creation of a call center/helpdesk and an information node, that will be both supported by the IT companies participating in this proposal and they will offer advising and help in security related matters, with notification about the most recent attacks, with the centralize and the provision of critical patches and virus updates, the notification about dangerous emails, the presentation of software and hardware products that can help with the confront of security related incidents, the informing about training courses and others.

3. To ensure the shielding of the SMEs participating in the project by using security software and hardware products (antivirus, firewalls and routers).

A2. Interactive customer services supply system

Aim of the suggested project is the design and development of a completed system able to provide a wide range of services to the citizens. It includes many terminal devices geographically distributed that will be connected to a service management office via wired or wireless networks. System architecture will allow the development of various system services according to customer needs and the available technology and networking infrastructure of the service provider. The system will be suitable as a platform for many different applications such as: automatic payment machines, e-government systems, information kiosks and event systems such as: fleet management systems, tele-medicine stations and more. Prototype is going to be implemented for the field trials and system evaluation purposes making use of the main features and capabilities of the proposed system.

A3. Infrastructure and Development of Broadband Application Services Provision in the Region of Western Greece

The task aims at the promotion and growth of the broadband technology in the Prefecture of Western Greece, both at the network and application level. The design of the broadband network will use among its inputs the requirements of the applications, while in parallel the applications design will take into account the capabilities of the network as they are specified by the optimization model. This way, and with parallel work in different levels of the problem, the widest possible dissemination of the broadband technology will be accomplished, while minimizing the financial factor, having checked all the possible technologies and being based on real requirements. Moreover, advanced services will be provided with the study, design, development and management of an innovative advanced system of Application Providing Web Services via the broadband network, with quality of service operations (QoS) and in combination with technologies of commercial application development (such as the Microsofts.NET platform, Web Services, XML, SOAP, etc.).

A4. Integrated system for international combined transport using smart containers

The task aims at creating an integrated information system for the promotion of international combined transport, especially transport of goods. The system consists of embedded systems that will be installed in containers / TIR trucks, making them smart, as well as of special interfaces addressing their integration with existing information systems under operation in the consortium partners. The pilot application of the system aims at showcasing the resulting benefits for all partners and the RWG, regarding transport security, container monitoring, needed security check minimization, and overall combined transport optimization in the Adriatic sea-route. The resulting benefits are quite significant for a wide range of enterprises with significant activities in the RWG, such as transport companies, logistic companies, shipping enterprises and agents as well as port management facilities.

A5. Development of research activities of the laboratory for mycotoxins determination aiming at the improvement of competitiveness of the food industry in the Region of Western Greece

The activity aims at investigating the conditions for agriculture, storage and preservation of primary agricultural products for inhibiting production of mycotoxins. The research activity will investigate the mechanisms of action which promote production of aflatoxins and ochratoxins during storage of the raw material, processing, production and standardization of the final product. Furthermore, the conditions which favor production of mycotoxins during primary production will be investigated in co-operation with the local producers, so as to develop modern agricultural practices for products free of mycotoxins. Finally, animal feed will be also controlled, as they may also contain mycotoxins which are then transferred in food of animal origin (meat, milk, etc).

A6. Integrated system for quality certification of aquaculture fish products and their relation to seawater pollution

The activity is placed in the food safety and technologies thematic area. Aim of the task is the development of an integrated system for the quality certification of aquaculture produced fishes and relation of both fish and aquaculture seawater quality. The aquaculture quality certification will be accomplished using sank multisensors in their seawater area, whilst fishes will be inspected by the specialized laboratory of Department of Biology, which corporate the appropriate equipment for fish – quality inspection via analytical macro – microscopically tissue and microbial inspection. More specifically its integrated operation has direct impact and potential results to Environment – Living Quality, such as monitoring of seawater pollution parameters and enhancement of living quality through food quality certification. Fishery quality certification, along with the technology infrastructure that will be built and the technical experience that will be gained, is expected to have positive impacts to the whole sector, by strengthening its position to national, European and international markets, boost their exports and create new markets that demand certified quality products. Furthermore, indirect positive impacts are expected to employment rates by the possible creation of new vacancies and to the transportation sector will have its benefits since the sales improvement means direct in-crease of transported products both in national and international level.

A9. Innovative Action for Plastics and Composites

The world need for protection of natural environment and the need for natural resources economy have led to the imperative need of recycling and the concept of integrated lifecycle for the products and manufactures. Within the framework of this concept the plastics industry has turned its interest in the exploitation of thermoplastic materials which has exceptional advantages of recyclability compared to thermoset materials. In this action, an effort for the creation of a research consortium is made, which apart from the development of four (4) new products (one for each industrial partner of the consortium), will inaugurate the collaboration of an entire sector, so as to create a culture for plastics in the industrial area of the Region of Western Greece and which apart from the present products will appear as a basic European competitor in the sector of innovation round the development of products friendly to the environment. By the exploitation of the very promising field of polymer materials with fillers emanating from the last developments in the sector of nanotechnology, the confrontation of the disadvantages of the polymer materials (very low conductivity) becomes possible, as well as the improvement of already existing advantages.

A10. Innovative intervention tools for infrastructures and environmental impact management

The task entitled “Innovative intervention tools for infrastructures and environmental impacts management”, which is under the thematic area “Environmental Management and Protection” of the Pole, aims in the development of innovative intervention tools, based on Information Technology, for infrastructures and environmental impacts management. Under this framework, the project targets the areas of port environmental management; transportation infrastructure works management and river systems management. The information system that will be developed will provide a high level of visualization in order

to become an efficient tool for public agencies and private organizations involved in the above mentioned activities. The tool design will be based on open architecture principles in order to ensure interoperability and extensibility.

A11. Development of a viable solution for the management of olive mill wastewaters with emphasis on valorization of byproducts

The primary goal of the task is to consider all alternative methods of olive-mill wastewaters (OMW) management that have been developed in the past, and to compare them on an environmental as well as economic basis, aiming at the development and demonstration of suitable integrated management scenarios that combine effective OMW detoxification with the production of high additive value products and/or energy. The result of the Task, that is, the unit of integrated management of OMW will be efficient immediately, because it would be possible to be used by all olive mills in the Region of Western Greece and it will contribute to cleaner environment.

- Focus has been given in strengthening specific infrastructures of public research and technological organizations. Four (4) such activities have been included in the Regional Innovation Pole.

C1. Laboratory for enhancement of the computer system's security- GO-STRENGTHENED

Creation of a virtual PCs laboratory, approachable from the internet, which will help to understand the strategy, methods and tools, which hackers use for their attacks. Thanks to this laboratory actions could be undertaken like testing some countermeasure methods of attacks, the infectivity of propagation of viruses, the enhancement of operating systems security and the reliability of security policies. The laboratory system will be composed of a powerful server and the VMWARE server software which can create about 20 virtual PCs. The 20 virtual systems can come back in 1-2 minutes to their initial state regardless of what software has been installed in them. Furthermore, a copy of a system's state can be taken after an attack in order to compare and analyze it extensively.

Such laboratory can be an exceptional tool for analyzing attacks and training technicians to systems security. This virtual lab could help the trainees to understand better the system security and to try attacks and install various tools on it without fear of destruction

C2. Establishment and function of an accredited laboratory of determination of mycotoxins (aflatoxins and ochratoxins) in food and agricultural products

The task refers to the establishment and function of an accredited mycotoxins (aflatoxins and ochratoxins) determination laboratory in food and agricultural products. It will satisfy the needs of the Region of Western Greece and of the broader area. Western Greece is mainly an agricultural area, where many food industries related to food production, food packaging and commerce of fruits (raisins, figs, etc), legumes, spiceries, nuts and cereals exist. Problems related to the presence of mycotoxins in the above food products are very common.

C3. Supplement of required laboratory equipment for performance of quality certification in livestock breeding, agricultural and fishery products with use of integral analytical tests

The Unit of Environmental Pollution, Management and Ecotoxicology of the Departnent og Biology, at the University of Patras, features a laboratory with considerable equipment and capabilities for environmental measurements and monitoring. Within the framework of the task, the support of the lab equipment is suggested in order to render possible the performance of histological and analytical examinations in fish, meat and agricultural products as well in order to enable their certification

More specifically, the supply of an Atomic Absorption Spectral Photometer is proposed. This equipment is essential for the implementation of the task since according to the plan, the laboratory is responsible for analyses of high accuracy in water and fish tissues samples. The Atomic Absorption Spectral Photometer can determine the presence and

concentration of heavy metals such as Fe, Cu, Al, Pb, Ca, Zn, Cd and more in samples. Due to the capability to trace low concentrations, it is essential in order to determine these metals in histological samples and water samples as well.

C4. Infrastructure for the development of a viable solution for the management of olive mill wastewaters with emphasis on valorization of byproducts

The purchase of new equipment (part of the overall pilot-scale system) for the fractionation of olive-mill wastewater (OMW) to fractions through the used of membranes and the analysis of basic parameters such as lipids, sugars, phenols, total Kjendahl nitrogen, calorific content is necessary for the proposed work. In addition, in order to support the pilot-scale units, it will be necessary to purchase auxiliary equipment, such as pumps for wastewater feeding, acid and base addition for pH regulation, water circulation for temperature control and gas analyzer (measurement of gas composition in methane, carbon dioxide, nitrogen, oxygen, etc).

- Further to activities supporting research, the Regional Innovation Pole comprised activities leading to the exploitation of existing research results and the creation of spin off companies for the transformation of these results into products and services. Three (3) such activities were included in the Regional Innovation Pole.

D1. Preparation for the commercial exploitation of a Boundary Element software

This technology is the result of a long-lasting research activity. The reliability of the software has been verified by solving many engineering problems and is guaranteed by more than 130 publications of the Task Manager in international journals with referees. The software-product is called BEM-SSIF (Boundary Element Method for Soil Structure Interaction & Fracture) and in its present form solves static and dynamic structural analysis problems, dynamic soil-structure interaction problems and classical as well as advanced fracture mechanics problems by means of the Boundary Element Method. In the context of classical and advanced fracture mechanics, BEM-SSIF has the capability of studying cracks under static and dynamic loads and finding the Stress Intensity Factors (SIFs) using the classical elasticity theory as well as higher order gradient elastic theories and couple stresses theories. BEM-SSIF can solve a wide range of conventional and advanced problems of engineering importance and can come up to the market's high expectations. Using hierarchical modeling BEM-SSIF cooperates effectively with existing commercial Finite Elements Method (FEM) software packages for more accurate and with lower cost solutions. At this moment the development of the BEM-SSIF's kernel is already complete and can fully support the first commercial version of BEM-SSIF. In addition, the research team has already started the development of a user friendly Graphical User Interface (GUI).

D2. Preparation for the Commercial Exploitation & Development of a Medical Decision Support System in Obstetrics

This task aims at the development of a commercial product based on the research findings that have resulted from two PhD works as well as post doctoral research that took place at the Laboratory of Automation & Robotics at the Department of Electrical Engineering & Computer Technology, University of Patras. This technology consists of an advanced system for processing, analyzing and categorizing embryo cardiac signals through advanced techniques. The system is in the stage of completion in order to be incorporated in a Medical Decision Support System.

D3. Preparation for the Commercial Exploitation of a Biological Filter for Potable Water

Greece's potable water supplies are running low and their quality is downgrading at a fast rate. Ammonia, nitrates, iron and manganese are among the most serious pollutants. The task aims at developing a commercial product of a biological filter which will effectively remove the above pollutants. It is required that the necessary design, construction and operation of pilot plant units under real environmental and not laboratory conditions take

place in order to locate and resolve problems that may arise during the transfer of operations to the real environment. In this way the final phase of all necessary tests will be completed before releasing the final commercial product.

- A Regional Technological Platforms was also included in the Regional Innovation Pole related to the thematic axis of Information and Communication Systems.

  E1. Technological platform for the promotion of applied research in the areas of industrial systems and automation, industrial control, embedded systems and information system and network security

  The technology platform in the Pole Information and Communication Technology axis comprises four main axes:

  - Industrial Systems and Communications
  - Industrial Control
  - Embedded Systems
  - Information System and Network Security

  It is of an intense development nature, since it aspires to disseminate the existing expertise of the research and academic institutions of the Region of Western Greece (RWG) that is related to the platform axes technologies towards the productive enterprises as well as all interested bodies, and increase the general level of innovation in the Region. The increase in competitiveness that is possible to achieve in this way, can lead to a subsequent increase in entrepreneurship and employment in the Region, creating an accumulative effect for the regional and national economy

One Education – Training activity has been included in the Regional Innovation Pole.

F1. Confrontation of security incidents, security strengthening and data retrieval - GET-INFORMED

The fundamental goal of this task is to provide the workers of SMEs with the essential knowledge so as to be able to recognize attacks and problems, which usually appear in an internet connected computer system, and to know the basic rules and procedures so as to confront and deter these problems. This objective will be achieved only if the participants stay in touch with the techniques used to face eventual security risks on the company's computer systems and to block effectively malicious attacks.

Finally, 6 Horizontal Activities of more generic nature have been included in the Regional Innovation Pole.

HA 1: Innovative and technological identity of the Regional Innovation Pole of Western Greece and its promotion and dissemination activities in Greece and abroad

In order for the Regional Innovation Pole to succeed, the following tasks need to be accomplished:

- Existence of a distinguishable identity for the Pole, which will contribute to its identification from the first day of its foundation. The creation and establishment of the Poles' identity is an essential, long-lasting and difficult process as this evolves through the particular technological and innovative tasks and activities which will be implemented in the Pole. One can resemble the Regional Innovation Pole to an umbrella that covers all the participating organizations such as the Universities, Technological & Research institutions, spin-off companies, organizations of research and technology transfer and generally the units that produce technology and innovation and/or utilize and exploit innovation.

- Suitable promotional and dissemination actions that will promote in Greece and worldwide the aims and activities of the Regional Innovation Pole

HA 2: Development Plan of the Regional Innovation Pole in Western Greece

The development and successful operation of such an ambitious and innovative project such as the Innovation Pole requires the creation of a development plan, which will outline the strategies for predicting and resolving problems which may arise during the implementation of this project.

HA 3: Technology Foresight in the Region of Western Greece

The task aims at mobilizing the regional innovation system of Western Greece and assisting at mapping out a policy for innovation while taking into consideration the future technological challenges.

The Regional Technology Foresight, will be based on the method of scenarios and will focus on the following three thematic areas of the Regional Innovation Pole.

The scenarios for each thematic area will be developed by a Work Group (W.G.) which will be formed in every thematic area. The W.G. will consist of approximately ten individuals, including the Coordinator of the Group.

HA4: METAGNOSIS: A tool for the optimal exploitation of the research and technological results and transfer of know-how and innovation in the Region of Western Greece

The horizontal activity aims at developing a sophisticated tool for the analysis and abstract presentation of research and technological results, which will function as a lighthouse of Knowledge and Innovation Diffusion that will be developed and installed at the website of Patras Science Park.

The main objective of the task is the Knowledge and Experience exploitation of the Greek research human resources. The exploitation and transformation of knowledge and technology in an easily disseminating and understandable form where the enterprises of Western Greece will have access.

HA 5: Integrated network for business support services addressed at existing and new firms, with the aim of promoting innovative activities in Western Greece – FANOS

With this Horizontal Activity, the partners aim at the exploitation of existing structures, methodologies and tools, their adaptation and embodiment into the proposed integrated Network, its completion with new structures, methodologies and tools, and, finally, the pilot operation of the integrated Network. A Network of Business Angels for the support of innovation has been developed.

HA 6: Observatory of Quality and Entrepreneurial Excellence

The “Observatory of Quality” has as a target the development, promotion, management of regional and national initiatives about “Quality” through the measurement of indices of competitiveness, development of business applications and support of the innovation polices.

6.4 Project Evaluation

Project feedback mechanisms and evaluation mechanisms. (max 10 lines)

The project has been regarded as the second most successful Regional Innovation Pole in Greece by the Ministry of Development. The overall feedback and evaluation mechanism followed comprised from different steps:

- Technical and Financial Periodic reports have been conducted for each activity every six months
- These reports were reviewed by the Pole Management Unit against the proposed goals and schedule of activities and the progress of each activity was determined
- The Management Unit compiled the overall consolidated Pole report and sent it to the General

Secretariat of Research and Technology

- On site technical and financial audits were performed once per year at the premises of the Pole coordinator and the technical and financial aspects of the project were reviewed and analyzed. Potential corrective actions were suggested to the task managers of the individual actions
- A final audit reviewed the overall results of the Regional Innovation Pole.

7. Description of Research team/Institution

Short description of R&D team and institution (max. 10 lines)

The Regional Innovation Pole is a union of 46 regional partners that comprise

- 34 enterprises of which 14 are small SMEs,

- 2 Universities, of which the University of Patras participates through 10 different laboratories

- 3 Research institutions,

- 2 Technological institutions,

- 4 business development organizations and

- the Regional Development Fund of the Region of Western Greece.

The partner coordination the overall effort was the Patras Science Park, a public equivalent body of the former Greek Ministry of Development with a constitutional aim at promoting innovation in the Region of Western Greece.

8. Applied Financial Mechanism

Describe financial mechanisms applied in transformation of research into innovation within BP, as well as means of connecting scientific research team and financiers (max. 1000 char.)

The Regional Innovation Pole of Western Greece has been funded by the Greek Operational Programme Competitiveness under priority axis 4 “Technological Innovation & Research” and measure 4.6 “Creation of Regional Innovation Poles”. The overall budget of the project amounted to 4,39 M€ of which 25.6% was private sector participation while public expense comes by 50% from the Greek state and by 50% by the European Union. The project undertook a public call procedure and was accepted on a competitive way.

9. Impact and benefits

Describe achieved benefits of R&D team and/or enterprise implemented innovation, as well as impacts on institutional and policy levels. (max. 1000 char.)

The Regional Innovation Pole of Western Greece demonstrated the potential of the regional key players to join forces in order to promote innovation. Further to the individual R&D projects that were financed by the pole and that produced individual innovative products and services, more general tools and innovation funding mechanisms were developed in the framework of the initiative. More specifically three spin off companies have been created, one technology platform has been elaborated relevant to ICT thematic axes, a business angels network has been enhanced, a quality observatory has been established and the infrastructure of the Region has been enhanced. The Regional Innovation Pole succeeded in influencing the overall thinking in the Region of Western Greece with reference to innovation and influenced the policy makers with reference to innovation funding by presenting the different tools generated to the Regional Development Fund of the Region of Western Greece.

10. Sustainability

Provide information on sustainability of innovation after financial aid within implemented financial mechanisms, and some multiplier effects as replication and extension of the action performed in BP. Expected use of Best Practice and lifecycle considerations. (max. 1000 char.)

Efforts have been undertaken in order to maintain the Innovation Pole consortium as a legal entity after the successful completion of the project. Furthermore specific tools generated in the framework of the Regional Innovation Pole have also exhibited the potential of sustainability. Such tools comprise business angel network called Innovation Fund, the Regional Technology Platform and METAGNOSIS, a tool for the promotion of technological expertise, know how and innovation.

11. Repeatability and transferability

Lessons learned from the project implementation team. Repeatability and transferability of the project. (max. 1000 char.)

The Regional Innovation Pole presents a good example of how to promote the collaboration between the different stakeholders in an area. The idea of having all stakeholders in an area around the same table and contributing towards the same goals that seems an utopia in many cases due to the competitive nature of both enterprises and academics, has been achieved in the Regional Innovation Pole of Western Greece. The elements of success comprise: a central guidance in the first steps of the procedure by the regional authorities (region of Western Greece), a central coordination of the overall project by an experienced organization (Patras Science Park), the willingness of the local stakeholders to collaborate and reach some measurable results in the framework of the Pole. Experience shows that in general when funding ends project partnerships dissolve and each partner pursues its individual goals and objectives. It is thus important for the sustainability of the results to have a legal entity behind an Innovation Pole. Yet, even in the case that this is not achieved, results may remain alive: this is especially the case in results stemming from horizontal actions. For instance, several results of the Regional Innovation Pole of Western Greece are still alive today, such as the Regional Technology Platform, the Business Angels Innovation Fund or the established spin-offs to name a few.

12. Evaluation

Describe reasons and evaluation criteria why the described example is a best practice. (max. 1000 char.)

The presented example is a successful good practice at a national level since it was ranked second between 5 similar national initiatives in Greece. The Regional Innovation Pole is a competitive programme that brought together the overall research potential of the Region and made the liaison between academia / research and enterprises on one hand as well as financing mechanisms on the other. The innovation network at a regional level that it helped consolidate is quite successful and showcases the potential generated by collaboration.

13. Contact of research team/institution	14.Contact of financial mechanism facilitator
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