

Enterprises 0916							
RIF PROPOSAL NUMBER	TITLE	COORDINATOR	HOST ORGANIZATION	PARTNER ORGANIZATION	PROGECT BUDGET	RIF FUNDING	PUBLISHABLE SUMMARY
ENTERPRISES/0916/0023	Smart Analytics for Improving Efficiency of Water Distribution Networks	Demetrios Eliades	Phoebe Research and Innovation Ltd	PA 1: University of Cyprus	238.200,00 €*	195.540,00 €*	An estimated 10-40% of Europe's available water is wasted because of leakages in the supply system. In developing countries the situation is much worse, where water losses (mainly due to leakages) can reach 40-50% of the water supply. In Europe, this corresponds to more than 10 billion tons of water lost each year, or, in financial terms, more than €10 billion of lost revenues per year for all the EU water utilities. Besides financial losses, leakages can escalate to pipe breaks causing disruption of operation, water quality problems which could affect the well-being of the society, as well as increasing energy usage and increased greenhouse gas emissions which affect climate-change. In 2015, cities and communities in Cyprus lost more than 20-30% of their water due to leakages, corresponding to more than €10 million losses. Reducing this number by 5-10% would have a significant and direct financial impact on these organizations, in the order of €0.5-1.0 million per year. Today, most of the water utilities rely a) on consumers to report leakages, and b) on expert operators to monitor SCADA sensors for detecting events. However, a large volume of lost water is caused by leakages which are never detected. Academic research has advanced significantly in the past years with intelligent ICT solutions which can enhance the utilities efficiency and leakage detection capabilities. In the WaterAnalytics project, we aim to bridge the industry with state-of-the-art research outputs. The general objective of the proposed innovation project is to conduct industrial research to develop and evaluate a novel product, WaterAnalytics, which integrates state-of-the-art intelligent monitoring methods, and big-data analytics to help water distribution system operators to improve system efficiency by 5-10%.
ENTERPRISES/0916/0065	GEOTHERMAL COLLECTOR PIPE WITH MAGNETOACTIVE THERMALLY CONDUCTIVE FILLERS AND GEOMETRICAL FEATURES TO INCREASE THE HEAT DIFFERENCE, THE ENERGETIC BENEFIT AND THE OVERALL SYSTEM PERFORMANCE	Panos Protopapas	Elysee Irrigation Ltd	PA 1: CY.R.I.C CYPRUS RESEARCH AND INNOVATION CENTER LTD PA 2: University of Cyprus	278.980,00 €*	199.951,50 €*	The GELY project seeks to develop a tailor-made geothermal collector pipe with unique advantages with respect to competition products in order to overcome the limitations of existing market solutions. Current geothermal collector pipes introduce single-sided characteristics, which are associated either with the external or internal geometry or with materials. The GELY project aims to address this market gap in the lack of a truly holistic approach for geothermal collector pipes and to generate an optimal combination of geometric characteristics and materials' structures for these pipes. A combination of this type can achieve a considerably better performance per meter geothermal pipe. The innovative GELY geothermal collector pipe will be produced through: a) The incorporation of magnetoactive and thermally conductive (nano)fillers in HDPE geothermal pipes. b) The orientation/alignment of the (nano)fillers in a radial direction along the pipe, by using an externally applied magnetic field during the extrusion process. c) The increase of surface roughness through a tailor-made internal texture to obtain an optimised relation between mass flow rate and heat transfer. d) The optimum external shape of pipe aiming to further increase the heat exchange between the fluid, the pipe wall and the outside domain without affecting the mechanical properties of the pipe. e) A detailed computational fluid simulation that will result to the optimum combination of materials and geometry versus the soil/ground conditions and the pipe length. f) The design and construction of a unique extrusion process that utilises a magnetic field and a specially designed die. The proposed idea is originated from the effort of a local manufacturing company of plastic pipes and fittings for water supply, irrigation, sewage and energy, named ELYSEE, a reputable research and innovation company, named CYRIC - Cyprus Research and Innovation Center and the Department of Mechanical and Manufacturing Engineering of University of Cyprus (UCY-MME).
ENTERPRISES/0916/0069	Real time monitoring the natural resources in the Mining Environments of Hellenic Copper Mines	Constantinos Xydas	HELLENIC COPPER MINES LTD	PA 1: Cyprus University of Technology	248.920,00 €*	198.920,00 €*	The extraction of natural resources is frequently associated with environmental degradation due to the dispersion of potentially toxic substances. For example, numerous abandoned mines (e.g. copper and gold mines) have left an environmental legacy of acidic drainage and toxic metals in downstream watersheds, with adverse effects to human and ecosystem health. Imaging spectroscopy can effectively identify contamination and determine its sources and downstream impacts on the water cycle and on vegetation health. In this context imaging spectroscopy represents a comprehensive monitoring tool to assess the mining related environmental impacts and the progress of ecosystems restoration. Due to the societies demand on abiotic natural resources extraction and the often associated environmental degradation processes, the scientific tasks related to the natural resource management are twofold: Abiotic natural resources extraction and environmental degradation processes. The NaturaMine project will develop areal time Laser Induced Breakdown Spectroscopy (LIBS)-technique and apply two existing imaging techniques with an ultimate goal to monitor the natural resources in the mining environments of Hellenic Copper Mines and improve the efficiency and sustainability of copper mining operations. This will combine the disciplines of Laser spectroscopy and Mining Engineering to advance the mineral selectivity and extraction efficiency without causing long term degradation of the environment.
ENTERPRISES/0916/0063	Situational Awareness, Control and Security Policies Enforcement on Multiple Virtualization Personas of Personal Devices	Thanassis Bouras	UBITECH LIMITED	PA 1: University of Cyprus PA 2: CY.R.I.C CYPRUS RESEARCH AND INNOVATION CENTER LTD	262.303,20 €*	200.000,00 €*	We propose the PERSONAS framework, which protects users against advanced cyberattacks. We follow a quite different approach compared to any of the common strategies currently employed for dealing with software exploitation. We do not deliver a product with no vulnerabilities or software that fixes the bugs of other programs. Quite the opposite, we assume that the user's device is eventually compromised, but we aim at effectively neutralizing the exploit. We prevent threats originating from one world (e.g. the workplace) to another (e.g. the social world) and vice versa. For example, consider a user that browses the web through an open access point of a coffee shop. If their web browser is compromised, any sensitive information related to their work should not be affected. For a second example, consider a company that requires all the employees to install a plug-in that logs their actions performed by their web browser (for security purposes). This software should not be able to track actions that are performed by the employee's web browser outside their working environment. PERSONAS virtualization framework enforces strict isolation of sensitive data used in a workplace from data used in the social world, and vice versa, ensuring that on a particular device different virtualized instances of the same system can co-exist. A PERSONAS-enabled web browser, for example, has two different instances, the corporate and the social one. The corporate instance and the social instance share the same configuration (e.g., cookies, site history, plug-ins, and passwords), however each instance has strict access to particular data. Each instance is activated based on location and network access. Both instances can be compromised, however threats that originate from the coffee shop can only affect the social instance, and vice versa. Finally, both virtualized instances run interchangeably in a transparent fashion, without the user taking notice of which instance is actually used.
ENTERPRISES/0916/0140	Dioxins as a Result of Chlorine in Transport Fuel	Chara Papastephanou	cp foodlab ltd	PA 1: LabOil Services Ltd	323.970,00 €*	195.630,00 €*	The proposed research seeks to quantify the levels of dioxin in the ambient air under everyday conditions of the typical year in Cyprus, and to establish a correlation between dioxins and the chlorine content in fuels used for transportation. It will provide health professionals, consumers and policy makers with an essential tool for the pursuit of solutions to a problem which is not yet understood to its full extent. The research team involves two R&D technology leaders in Cyprus specializing in Energy, fuel and lubricant analyses (PO) and an environmental specialized laboratory (HC).

ENTERPRISES/0916/0083	Donkey Milk Bioactive Powder	Panagiotis Mousikos	P.E.S. KTIMA GEORGIADI LTD	PA 1: Cyprus University of Technology PA 2: E.U.C. Research Centre Ltd	161.874,00 €*	156.854,00 €*	<p>Infants who are breast-fed have lower incidence as well as less severe infections and gastrointestinal illnesses compared to infants who are exclusively fed infant formula (due to the lack of human milk); this is partly explained by the lack of bioactive and anti-infective factors from amino acid or extensively hydrolysed milk formulae.</p> <p>Nonetheless, in formula-fed infants and immunocompromised, dietary interventions are effective means of enhancing immunity; several in vitro and in vivo studies showed that donkey's milk conveys constituents which have nutraceutical and functional properties that can support immunity. However, it is recommended by paediatricians and clinicians that raw milk must be thermally processed to render it safe for sensitive population (i.e. infants and immunocompromised). On the other hand, thermal processing is known to reduce the bioactivity of milk.</p> <p>Consequently, the objective of this project is to produce safe, non-thermally processed, freeze-dried donkey milk which will carry superior bioactivity.</p> <p>Due to the nature of the processing methods that are going to be used in this project, the methodology has been designed in a way that will allow the optimisation of each of the processing techniques, especially tailored on the chemical and microbiological composition of donkey's milk produced in the proposed farm. The milk processed under the optimised processing methods will be compared to raw milk in terms of bioactivity and hence characterise the non-thermal processing method in terms of its ability to preserve bioactive compounds.</p> <p>It is expected that the novel, non-thermal processing method which will be used will have minimal impact on bioactivity. Based on the expected results, by the end of this project, three distinct products can emerge with each being applicable to a different niche market and of superior quality than the existing products currently produced from Golden Donkey Farm; two of these products are applicable to the pharmaceutical and infant market.</p>
ENTERPRISES/0916/0159	SERvice for Improvinq Galileo operation over Cyprus	Agisilaos Agisilaou	Geolmaging Ltd	PA 1: Frederick Research Center	234.163,60 €	199.947,00 €*	<p>The objective of this proposal is to establish a single-frequency GNSS positioning regional ionospheric mitigation service over the eastern Mediterranean based on the more accurate representation of the state of the ionosphere. This improvement will be possible through the adjustment of the NeQuick-G algorithm, which is the basis for the ionospheric single-frequency GNSS correction algorithm adopted by GALILEO GNSS system, using ionospheric characteristics measured over Cyprus.</p> <p>The proposed service will depend on a modern digital digisonde (DPS-4D) and a collocated dual-frequency total electron content (TEC) monitor in Cyprus in the frame of real time monitoring of ionospheric propagation predictions. This service will aid towards improved representation of the regional ionosphere in its median (long-term) as well as near real-time representation and will therefore reduce ionospheric positioning errors both in a climatological sense but also in a weather-like mode of NeQuick-G in the frames of the Galileo system operation. The operation of this novel service will facilitate improvement of CCIR files that define the ionospheric electron density profile and therefore provide a direct indication of the extent of the positioning errors which directly affect the trans-ionospheric propagation of GNSS satellite signals under quiet geomagnetic conditions. The data observations will be processed and ingested into the NeQuick model by adjusting its relevant parameters (anchor points of the electron density profile and the Az ionisation level) and the users will have the option to download files that represent more accurately the median behaviour of the local ionosphere or even to update these files more often in a near-real time operation mode. This service will ultimately propose a novel regional mode for ionospheric positioning error mitigation that may be fully or partially adopted in other parts of the globe as a means to enhance the accuracy of single-frequency positioning devices.</p>
ENTERPRISES/0916/0030	Development of Ultra Strong Multi-Functional Carbon Fibre Textiles through Nanofibre - Fibre Effective Bonding	Vasileios Drakonakis	AMDM - Advanced Materials Design & Manufacturing Limited	PA 1: Cyprus University of Technology	263.636,76 €*	199.966,49 €*	<p>In transportation, there is a continuous need for lighter and at the same time stronger structures. The aim of this project is the development and production in industrial scale of a novel, highly strong carbon fibre (CF) textile material through the introduction of additional effective load-transfer mechanisms, which excessively enhance textile functionality and eventually CF composite strength. Carbon-NanoWeld presents the industrial development of an innovative textile-material with microfibre-nanofibre-nanoparticle fractal networks that imitate the prototypical architecture of natural structures such as feathers. This textile is more than 300% stronger and 8% lighter per volume unit compared to conventional CF reinforced plastics.</p> <p>Carbon-NanoWeld aims to generate and collect original research data which will assist in the optimization of the developed processes, products and services, in further R&D activities of the consortium, and in scientific publications in peer reviewed journals where applicable.</p> <p>Carbon-NanoWeld aims to involve researchers in original, high-tech industrial research work in the field of advanced polymer nano-composite materials through novel activities of material design, processing, and experimental evaluation. Carbon-NanoWeld creates 2.33 scientifically specialized job-positions (based on PDRA full-time person-months) with the aim to be sustainably supported by AMDM upon completion of the project.</p> <p>General objectives:</p> <ol style="list-style-type: none"> 1-To develop a new adjustable Prototype Processing-Module 2-To implement the Prototype Processing-Module through customized industrial sub-processing techniques 3-To integrate and deliver the Prototype Processing-Module for innovative advanced textiles/prepregs 4-To research, evaluate, and optimize the product of the developed Prototype Processing-Module 5-To establish and commercialize a new class of advanced textiles based on carbon or other advanced fibres
ENTERPRISES/0916/0142	Cheminformatics aided discovery of novel COMT inhibitors for Parkinson's Disease Treatment	Antreas Afantitis	NovaMechanics Ltd	PA 1: Erevnitiko Idryma P. L. PA 2: The Cyprus Institute of Neurology and Genetics	261.697,15 €*	199.999,27 €*	<p>The project aims at using advanced computational techniques to identify potent and superior compounds used for the treatment of Parkinson's disease (PD), a neurological disorder with no cure that affects millions of people with devastating effects on the quality of life of patients. Specifically, the project aims at identifying novel COMT inhibitors, a class of compounds commonly used in the symptomatic treatment of PD, in combination with L-DOPA and carbidopa, and aim to increase the availability of this drug to alleviate the symptoms. Accordingly, the objective of the project is to identify compounds that are potent COMT inhibitors and therefore could be of significant interest for the PD treatment. Towards this end we will develop the necessary computational and experimental methods and tools in order to: (i) identify potent COMT inhibitors among compounds already synthesized and deposited in large databases and (ii) repurpose existing drugs that would also act as COMT inhibitors. To accomplish our goal, computational tools developed within the project will be based on ligand- as well as structure- based techniques and will generate strong evidence on the compounds potency to act as COMT inhibitors. Based on a consensus scheme that will incorporate both ligand- and structure- based methods and more filters that will be applied (including in silico toxicity assessment, Lipinski rule of five, ADMET properties assessment and investigating for Pan-Assay Interference Compounds (PAINS) – promiscuous compounds etc), a priority list of potential COMT inhibitors will be proposed. Among those, the top ranked compounds and FDA approved drugs (repurposed drugs) will be sourced and tested in vitro for the ability to inhibit COMT. Ultimately, some compounds that show strong inhibitory action will be identified. The most promising compounds will be tested in vivo and compared to currently marketed drug, entacapone.</p>

ENTERPRISES/0916/0170	High Precision Cellular Localization System	Nikos Antoniou	SIGINT SOLUTIONS LIMITED	PA 1: Open University of Cyprus	252.050,00 €*	199.868,12 €*	<p>The main objective of the proposed project is to develop positioning algorithms and methodologies that will be implemented by the Host Organization into the following new products:</p> <p>(A)A primary product that will be called as: i-LoCoN and will provide a Cellular Localization Platform of increased accuracy that will allow cellular operators to achieve increased localization accuracy detection of cellular users in both outdoor and indoor urban environments, including detecting users in indoor multi-floor environments, a process which typically is not easily feasible since current cellular systems cannot provide such detection granularity with typical localization tools and methodologies.</p> <p>(B)A secondary product that will be called as: i-BTS and will be a light Software Defined Radio (SDR) light cellular base station, which will be able to act as an add-on to the primary product, and will be emulating a 4G TDD base station. The secondary product should be capable to be mounted in the form of a payload to on an Unmanned Aerial Vehicle (UAV) that will allow search and rescue teams to detect with increased accuracy a user in a predetermined local outdoor or indoor environment. This secondary product will act as multiple virtual cellular base stations for localization purposes, since its position will be dynamic and not fixed. The secondary product requires that the product users have knowledge of the rough outdoor area or the building the cellular users are located. This information can be obtain by other using the primary product through a cellular operator or through other means (e.g. product users are aware that a specific cellular user is within a building based on other provided information)</p> <p>Proposed work will consider localization capabilities of all cellular technologies, i.e. 2G, 3G, 4G but it will mostly concentrate and use parameters from 4G/LTE technologies since LTE technology can provide better localisation granularity.</p>
ENTERPRISES/0916/0043	Double Sided Laser Machining System For Lenses Manufacturing	Piotr Tokarski	MSL MED SERVICES LTD	PA 1: Laserlabs Ltd	251.840,00 €*	171.528,00 €*	<p>The aim of the project is the development of the Cypriot economy by: increasing the innovativeness of Cypriot enterprises, increase its competitiveness, enhance the role of science in economic development, increasing the share of innovative products of the Cypriot economy in the international market, creating a sustainable and highly specialized jobs and the increased use of information and communication technologies in the economy. The proposal is to implement comprehensive research and development leading to the construction of new, advanced technology of laser micro machining of optical lenses: intra ocular (IOL's) and contact lenses (c.l.).The innovative technology process will allow to increase the product's quality tremendously, as a result of using lasers for the whole process: cutting and polishing.The current production technology is based on a lathe that cut out half-finished product, which then is processed on simple, manually controlled devices such as polishers and blockers.New technology will significantly improve the efficiency and cost effectiveness of the production process. We expect that the complete manufacturing process can be reduced from 3-4 days to 2-3 minutes. Actual cnc lathe cutting technology doesn't allow the manufacturers to produce the single IOL lens for individual patient. The reason for that is the technical and economical non-effectiveness of actual technology.</p> <p>The newly invented technology can open the door for another biotechnology products manufactured by use of the lasers. The orthopedics , the cardiology and the neural surgery are one of the most developed surgical specialties which can benefit from implementing the new technology. The possibility of implementing this technology are almost limitless, and it is difficult to estimate, especially in the era of an aging but wealthy society and the continuous increase in demand for highly specialized, safe products for medicine.</p>
ENTERPRISES/0916/0055	SMART and FLEXible mobile DATA COLLECTOR for GIS	Elias Frentzos	GEONOEIS LTD	PA 1: Cyprus University of Technology PA 2: Ministry of Transport, Communications and Works	246.960,00 €*	198.396,00 €*	<p>Much of the initial investment in modern GIS is spent on initial data collection. Traditional data collection performed with handheld GPS by foot, increases the respective cost. In order to minimize the resources employed for the data collection process, major surveying instrument manufacturers have presented several mobile mapping systems, having many advantages including this minimization of the resources in the field, the review the data collection process and effectively document the GIS data. On the other hand, their cost is up to hundreds of thousand Euros, whereas the usage and exploitation of the produced huge data sets make their use difficult and often counterproductive. Recently some lower cost and lower accuracy systems have been proposed, however, their cost remains in the scale of several tens of thousands or Euros while the accuracy they achieve remains questionable. MOBILO aims to overcome these systems drawbacks. Specifically, we propose a low-cost mobile mapping system which consists of a GPS / GNSS RTK, an inertial INS / IMU system gathering position and orientation data, as well as video cameras to collect image data. We propose the development of two low cost alternative solutions (a) one with low-cost cameras (e.g. action cams) together with any existing RTK GPS, an alternative which reduces the cost of employed hardware to several hundreds of Euros, and targets to a specific customer group i.e., professional surveyors, and (b) high-end machine vision mission cameras together with RTK GPS / GNSS, INS / IMU which targets to more advanced users.</p> <p>We have already employed the basic ideas of the proposal in a rather simple form. In order to record city infrastructure objects and road equipment. Our final goal is to lower the typical errors achieved by the proposed system in its present form. The results so far establish that the proposed system minimizes the data collection time, while providing the tools for high productivity in the office, thus reducing the costs of mapping large areas.</p>
ENTERPRISES/0916/0160	Development of a Hybrid Ozone-Biological Process for the Treatment of Drill Cuttings	George Kazamias	Innovating Environmental Solutions Center Ltd	PA 1: Cyprus University of Technology	250.325,00 €*	200.000,00 €*	<p>The sustained low prices of oil and gas (O&G) and the structural changes that occur in the O&G industry have resulted in reconsidering of a wide range of practices at a sector of outmost importance for Cyprus. Although Drill Cuttings (DC) constitute one of the most important residues of the sector, their disposal causes environmental burden and their treatment contributes significant cost due to application of energy intensive thermal methods. Although available soil treatments comprise physical, chemical and biological approaches, combined methods are considered as novel competitive technologies often offering the most effective solution. The project aspires to develop a sophisticated hybrid ozone oxidation-bioremediation system aimed to treat DC at pilot-scale and to produce added-value compost as well as a microbial consortium enhancing the treatment capacity of DC bioremediation processes. Initially the pilot-plant will be designed and constructed based on the wide expertise of IESC in developing full-scale applications, while the operation of ozonation and bioremediation will be tested separately to evaluate the efficiency of each system. Consequently, the two methods will be combined to optimize a number of operational parameters aiming to maximize treatment efficiency. The potential of the compost generated as end-product for application in agriculture will be explored through cultivation of plants, while a microbial consortium adapted to the waste will be employed for biotreatment enhancement. Moreover, Next Generation Sequencing and qPCR will be applied by CUT to quantitatively detect the expression of important genes involved in the process and to determine the composition of the microbial community formed depending on operational parameters. Through the project an alternative and sustainable strategic waste valorization plan will be constructed, while the company aims in moving the technology to process scale for the management of DC in Cyprus and internationally.</p>

ENTERPRISES/0916/0076	Development of Wisdom Tools and Intelligent Educational Apps	Yiannis Laouris	Ekkotek Limited	PA 1: UCLAN CYPPRUS	284,850.88 €*	199,395,62 €*	<p>WisdomApps will develop wisdom-harnessing methods and systems, and market them as “engines” for diverse company-owned applications, but mainly as APIs for third-party applications. Two lines of products are foreseen: (a) Decision Support Systems (DSS): The problems we face today are significantly more complex than a few decades ago, in all domains of human activity. Stakeholders and experts have different points of views. The new systems will be capable to engage authentically and democratically hundreds of stakeholders and harness and exploit their collective intelligence and wisdom towards taking better decisions. (b) Intelligent Educational Apps: Use structural modeling to represent learning skills of any curriculum and use it to optimize the sequencing of presenting learning modules to a learner and thus shorten significantly the time required to master a set of skills.</p> <p>The applicant company pioneers already internationally in the development and application of certain technologies that are capable of exploiting collective intelligence and wisdom for small groups. The new systems will scale up these processes, developing both the mathematical structures and the necessary computer methods and systems. Their technological approach is entirely different from solutions proposed and/or applied by their competitors. The outcomes of the project will result in three patent applications, three scientific publications and diverse dissemination activities. The project will produce professional business and commercialization plans and the products will be made available to customers through the company’s website and established App stores.</p>
ENTERPRISES/0916/0080	Self operated vertically rising flood barrier	Antonis Toumazis	Dion. Toumazis & Associates LLC		288.000,00 €*	200.000,00 €*	<p>ORTHOFRAGMA (ortho=upright, fragma=barrier) is a planned research project aiming at the acquisition of new knowledge and skills in developing a new innovative and smart product for the protection of the built environment and infrastructure from flood damage (Patent application filed to the UK IPO). This vertical flood barrier is normally hidden below pavement level, in front of an opening through which flood water might enter a protected area. On flood approach, hydrostatic pressure acting on a buoyant protrusion at the top of the barrier applies an upward force greater than weight of OTHOFRAGMA, thus lifting the barrier automatically. The crest of the barrier is always above flood level, thus preventing the entry of flood water in the protected area. On flood recess ORTHOFRAGMA lowers itself again automatically. Dedicated design software will be developed enabling the production of components forming the assemblies of the product. The aim is to have a fully automated production process, using durable materials, with no human intervention. A prototype will be constructed for investigation in the in-house facilities, both for smooth vertical movement and for effective water tightness. A pilot product will be constructed and installed in an environment prone to flooding. ORTHOFRAGMA will also be promoted through videos, social media, demonstrations and exhibitions. Flooding is the number one natural catastrophic phenomenon which is likely to become more frequent and more intense due to climate change. The EU Floods Directive promotes the motto “living with the floods” whereby flood damage is avoided by implementing flood adaptation measures. Automatic flood barriers are adaptation measures and their market share is growing. The challenge is to bring an effective new product to the international market at a competitive price. The success of ORTHOFRAGMA will increase the competitive capacity of the firm and create jobs in Cyprus and the EU.</p>
ENTERPRISES/0916/0066	Smart Standardized Marine Sensor Cable Interface	Daniel Hayes	CYPRUS SUBSEA CONSULTING AND SERVICES C.S.C.S. LIMITED	PA 1: Erevniko Idryma P. L	198.280,00 €*	147.526,00 €*	<p>The goal of this project is to develop an innovative, programmable interface meeting standardization benchmarks for data and communication. This “Smart Standardized Marine Sensor Cable Interface” will be able to replace normal marine sensor cables because of its small size, pressure tolerance, and low power requirements, and will allow sensor users and manufacturers to very easily “standardize” a wide variety of sensors by specifying command syntax and sensor metadata in a simple SensorML file used in the PUCK protocol. This will also make it easier for platform integration since the platform will only have to develop a software module to communicate with all such standardized sensors once. Most importantly, the smart cable interface will be programmed by users in order to carry out on board processing and formatting according to their needs. Investing in the required technical and strategy development will lead to a tremendous opportunity to capitalize on a particular need in the marine technology industry. A huge number of sensors are deployed in the world’s oceans for variety of purposes. The measurement of multiple environmental parameters is often needed, so several sensors may need to be integrated into a single operating platform. Even for systems that undergo the necessary development, the lack of standardization and inclusion of sensor metadata is a threat to the reusability of the collected data. However, the lack of standardization schemes in communication and storage of measurement data, sensor and platform metadata and control, combined with the large number of sensor and platform manufacturers, results in unnecessary complications in development and commercialization of observing systems. The Smart Standardized Marine Cable Interface will reduce development and operational cost for platform and sensor manufacturers, provide the marine cable industry with advanced capabilities, and allow the marine observations collected now be accessible and usable indefinitely.</p>
ENTERPRISES/0916/0072	Innovative Enhancement of the Navarchos Fleet Management System	Ioannis Constantinou	Istognosis Ltd	PA 1: UBITECH LIMITED	286.632,00 €*	200,000,00 €*	<p>With the increasing complexity of operations in transportations, there is an urgent need for companies with fleets to increase drivers and fleet productivity as well as to minimize their operational costs; therefore there is a significant demand for highly-capable, yet easy-to-use Fleet Management Systems (FMS).</p> <p>Existing state-of-the-art FMS operate mainly on the cloud as a service and provide significant graphical information system capability and capacity as well as address the majority of operational and maintenance management requirements. On the other hand, existing solutions seem to exhibit a gap towards transforming the plethora of telemetry and tracking data into rich insights and, especially, into cost-efficient, eco-friendly consultation for both drivers and fleet managers.</p> <p>The current version 1 of Navarchos FMS operates on a single-server as a web service and provides mainly monitoring and reporting functionalities to fleet managers. Therefore, fleet managers are expected to analyze the plethora of available data manually, in order to infer driver behavior insights. Furthermore, Navarchos lacks of important, state-of-the-art features such as routing and scheduling, real-time visually-appealing notifications and recommendations to drivers as well as intelligent metrics and indicators about drivers’ eco-driving behavior and productivity to fleet managers.</p> <p>The main goal of this proposal is the technological and innovation-driven upgrade of Navarchos to NAVARCHOS 2 so as to compete world-class related platforms. The main features that will be designed and implemented in the frameworks of NAVARCHOS 2 include: a) real-time driver-centric notification and recommendations algorithms for eco-driving behavior, b) intelligent metrics and analytics for empowering fleet managers to have a more comprehensive overview and complete control of their fleet, c) routing optimization and scheduling tools for increased fleet productivity, and d) scalable, highly available and high performance cloud-based infrastructure.</p>

ENTERPRISES/0916/0025	Herbal essential oils: Potential for development as low-risk pesticides, plant growth promoters and produce sanitizers	Pavlina Onisiforou	Meydan Solutions Ltd	PA 1: Cyprus University of Technology	214.672,80 €	197.231,00 €	Widespread use of synthetic insecticides has led to negative consequences resulting in increasing attention to alternatives, such as essential oils. Essential oils contain a variety of molecules that act as pesticides and affect biological parameters such as growth rate. The share of eco-pesticides in the global market is constantly increasing yielding opportunities for SMEs, such as Meydan Solutions Ltd. In this context, PlantSafe project objectives are: 1) to conduct research in order to obtain novel results for the efficacy of a new product containing essential oils of eucalyptus and rosemary and its effects on treated plants and non-target mammalian species, 2) increase the participation of SMEs on the Cyprus RTDI system and 3) to support long term employment of young researchers. For materializing the objectives, the project is structured in five Working Packages (WPs). WP1 contains administrative and financial management. For supporting research novelty, internationally renowned scientific experts will participate forming the Scientific Committee. WP2 tasks and activities implementation will maximize project impact and visibility at national and international level. In WP3, industrial research to determine product's effectiveness against key pests and a model natural enemy will be conducted in the laboratory and greenhouse. Moreover, research on the synergistic effects of the two essential oils present in the formulated compound in plants and its potential use as plant growth promoter and as an alternative and eco-friendly sanitizer during postharvest storage will be conducted (WP4). Finally, in WP5 side effects of the eco-pesticide on mammals and mammalian cells will be researched. The Project is fully compatible with the RESTART program call for research in enterprises and will be implemented with the synergy of Meydan Solutions Ltd and the Cyprus University of Technology (CUT).
ENTERPRISES/0916/0028	Developing an evidence-based Competence Assessment Tool for the Soft Skills of Seafarers	Ralph Becker-Heins	Safebridge Cyprus Ltd		256.622,97 €	171.937,39 €	The main objective of the project is to develop a multi-language, evidence-based Competence Assessment Tool for the Soft Skills of Seafarers (CAT-SSS). The proposed tool addresses the need of the local and global shipping industry to identify low performing masters and chief officers and provide them with targeted training and support, thus developing high performance crews and preventing human errors and associated loss of lives and cargo. Under the current proposal Safebridge Cyprus aims to significantly improve the existing online tool that the company is offering by undertaking a rigorous research program. More specifically, the existing test of soft skills will be translated and adapted from English to Greek and Tagalog and an evidence base will be built to provide norms and support its validity and reliability for assessing marine masters and chief officers that are native speakers of these languages. Furthermore, a prototype platform will be designed and developed to deliver fully automated, online assessment and reporting of the results in an fair and unambiguous way. The proposed actions will lead to the development of a one of a kind product that is not currently existing in the market. The originality of the product is determined by the combination of its properties: industry-specific, online administration and reporting, standardization, established reliability, validity and norms for English, Greek and Tagalog versions. This makes CAT-SSS a tool that is professionally, ethically and legally justified to use by shipping and crewing management companies allowing them to perform cost-effective, large scale assessments, identify low performers and implement interventions to prevent accidents.
ENTERPRISES/0916/0040	Boosting Employability and Entrepreneurship via Centres of Learning and Co-operative Creativity	George Mills	G.M EuroCy Innovations Ltd	PA 1: FILOKALIA, NGO PA 2: G.E. English Centre Private Institute Ltd PA 3: Novatex Solutions Ltd	261.720,00 €	183.204,00 €	The EU Commissioner for Employment, Social Affairs, Skills and Labour Mobility clearly emphasised that investing in people is key to economic growth in the EU. Since 2011, Member States have been advised to implement prevention policy initiatives and measures towards improving skills and overcoming the challenges related to school-to-work transitions. One of the measures to address skills mismatches has been the strengthening of the links between education and labour market, involving companies and social partners in the development of curricula and training content and methods to ensure catching up with the changing needs of the economy. Moreover, many EU countries strive to provide more opportunities to young people, ranging from improving the quality of the early childhood education, supporting children at risk of exclusion, equipping teachers with appropriate education and training to work effectively with young persons, etc. Recognising the above challenge and opportunity, the B2ECIoC project aims to develop a "Learning and Co-Creativity Product Package" (L2CP), so as to: i) increase the hard and soft employability skills of children, i.e., soft skills related to team working, behaviour, problem solving, etc., and hard skills on specific subject areas widely recognised as key skills in approaching the labour market (e.g., ICT, digital games, machine programming and service robots); ii) implement courses based on an innovative learning methodology thus achieving higher self-motivation and engagement of children. The implemented methodology will value several qualities like team trust-building, significant degree of experimentalism, importance of positive relationships between teachers and children, flexible organisation of the time and work, learning outside the classroom; iii) offer validation and accreditation of learning outcomes, by applying for becoming an accredited education package by education authorities, first in Cyprus and then in other countries with potential customers.
ENTERPRISES/0916/0134	Fleet Information Sharing	Petros Achtypis	Prevention at Sea Ltd		298.860,80 €	200.000,00 €	The aim is to develop an innovative platform solution, Fleet Information Sharing (FISH), rooted on clear-market needs and fully business oriented, addressed to the maritime industry. FISH perfectly matches the objectives of the Programme and the Call "Research for Enterprises" as it contributes to the increased competitiveness and growth of a Cypriot company through the development of an innovative solution and utilization of research findings during this process. FISH aims to validate and bring to the market a solution that simplifies, organises, and virtualizes the ship inspection process, by enabling users to review a ships' data at any time. FISH targets to eliminate the administrative burden of the ship inspections by providing an economically beneficial solution for its users, and stakeholders. FISH is expected to be managed effectively and timely by using standard Project Management procedures. Our company holds an ISO 9001 accreditation, therefore all Risk Management & Quality Assurance procedures will be followed strictly based on ISO. We have a dedicated team that will work on the project materialization, using state of the art software & hardware applications, and by employing top notch software development procedures. We will disseminate and communicate our project's results to the intended stakeholders, based on the dissemination strategy we have developed for our proposed project, taking into consideration activities in line with National Policy for 'Open Access'. We are expecting that our proposed project will radicalize the maritime industry, by proposing a totally new method of performing ship controls, while on the same time providing our targeted audience major time and cost savings on the procedure. We are also expecting to help the Cyprus R&D system to develop further by actively contributing to it, boosting the national economy by creating new job positions, and finally, helping to expand the current research on paperless maritime solutions.