

National Projects



JO Group

JO Group / Companies

SME



Research and Development ICT



eLearning and Serious Games



eHealth and Smart Healthcare



Agritech and App Development



Environmental Technologies and Energy Efficiency



European Funds



Digital Marketing

NO PROFIT



EU Citizenship



Innovation Hub

AGE-SENSEAI

Sensing and AI techniques for aging well

As life expectancy increases, it is necessary to ensure that elderly people live with dignity in their homes by promoting their well-being through the creation of comfortable living environments and ensuring personalized assistance. The goal of Age-SenseAI is to develop an innovative sensor ecosystem in the home environment, aimed at the elderly living in multi-resident contexts and their caregivers, to measure the comfort and activities of the inhabitants. Through these measurements, it is possible to identify changes in people's behaviors, Activities of Daily Living (ADL), and risk factors, such as falls or diseases that arise due to environmental conditions, thereby improving the well-being and health status of the elderly. In particular, Age-SenseAI aims to go beyond the state of the art by creating an ecosystem suitable for living environments where multiple people live together. To date, this scenario is little considered due to the cost of sensors and the complexity of the measurement problem. Age-SenseAI aims to overcome this obstacle by integrating a network of sensors in the environment and on mobile robotic systems that allows monitoring the activities and comfort of multiple inhabitants through data analysis with Data Fusion (DF) and Artificial Intelligence (AI) techniques. DF techniques will be applied to obtain less uncertain, more accurate, and complete data sets, which will then be processed through AI techniques to discriminate the specific activities and comfort of multiple users. Additionally, AI will serve to optimize the sensor ecosystem to reduce hardware and installation costs. For the identification and development of the Age-SenseAI sensor ecosystem, co-design sessions will be held with the partners of the Age-It consortium, specifically of Spoke 9, and with the end users (elderly and caregivers) to define the scenario most suited to the design needs. The developed ecosystem will then be tested in the lead partner's Living Lab with real users.



PMF Research



PNRR, Missione 4 Istruzione e ricerca - Componente 2 Dalla ricerca all'impresa - Investimento 1.3 - Next Generation EU

CODE

B83C22004800006



Oct 2024 - Oct 2025



€ 699.000,00

SMARTEE-PLANTS

Smart Energy-Efficiency wastewater treatment Plants

The research project, through a contaminative approach between technologies of microelectronics, sensor technology, modelling process control and the experience of the numerous technical researchers and Water Service (SI) managers from the different geographical areas of the region, aims at a profound process of energy efficiency of the water treatment plants present on the entire sicilian territory with specific involvement of the metropolitan areas of Catania and Palermo and of the Free municipal consortium of Enna. In this way, on the one hand it will be possible to take into account the territorial differences, arriving at a characterisation of the entire regional territory, and on the other hand it will be possible to choose three different planting scale (large, medium and small), one for each territorial reality involved, so as to produce results that can be extended to all the plants operating on the island.

IPPO Engineering's expertise in the energy field is functional to the project in the actions of the energy performance analysis of the plants at the two proposed scales (regional and specific for the three plants).



G57H18002050006



Jan 2023 - Jun 2025



€ 3.425.390,79

**IPPO Engineering**

**POC 2014-2020 - Asse 1
- Azione 1.1.1. (PO FESR -
2014/2020 - Azione 1.1.5)**



SMARTEE-PLANTS

PKU SMART SENSOR

Implementation and validation of a Point-of-Care system for home-testing monitoring of phenylalanine in patients with hyperphenylalaninemia

PKU-Smart-Sensor is the project for the implementation and validation of a Point-of-Care system for home-testing monitoring of phenylalanine in patients with hyperphenylalaninemia. The project aims to create a portable Point-of-Care (PoC) demonstrator for monitoring phenylalanine (Phe) levels in patients with hyperphenylalaninemia and to demonstrate its functionality, robustness and reliability in a real operating environment. An evaluation of the analytical performances with real samples are being carried out by the Regional Hereditary Reference Centre for the Prevention, Diagnosis and Treatment of Metabolic Diseases of Children in Catania. The aim of the project is the realisation not only of the single disposable biosensor containing the sensing components, but of the entire Point-of-Care platform, built with key innovative technologies, characterised by low cost and ease of use, in order to be easily used by the patients in their home environment for the monitoring of plasma Phe levels in real time. The PoC will be supported by an ICT infrastructure that facilitates communication with the doctor or the Hereditary Reference Centre for a correct remodulation of therapy in real time. In particular, apps for Android and iOS will be created for communication between the platform and the sensor connected to the smartphone, and a data collection server with the related web interface is also being created to allow data consultation. Within the project PMF has the role of creating the user-friendly interface for managing and displaying the results of the PoC device and maintaining the historical data on a server.



PMF Research



PO FESR Sicilia 2014-2020

CODE

08RG7211000341



Jan 2020 - Jun 2023



€ 1.844.514,99

SECESTA VIASAFE

The SECESTA ViaSAFE project provides for the development of an ICT platform suitable for using, in almost real time, the information collected by the multi-sensory system for monitoring volcanic ash created during the previous SECESTA project. The integration of the measurement system with further sensorial solutions, platforms for processing the measured data and predictive models of the transport in the atmosphere and the accumulation of volcanic ash on the ground, will enable to develop a series of services to make mobility in the metropolitan area of Catania more efficient and safer, using an effective and reliable permanent monitoring system for the phenomenon of volcanic ash fallout. The motivation that led to the realisation of the project is the need to develop a system that is able to provide qualitative and quantitative information on the state of the process observed with the aim of continuous and distributed monitoring of the quantities of interest. This system can be used to provide an “early warning” of any phenomena detected in order to plan air traffic management and runway cleaning operations in an appropriate manner. The multi-sensorial approach gives the system the ability to extract information on the observed phenomenon with an optimised degree of redundancy reducing the measurement noise and therefore also possible false alarms.

Task of PMF is to establish the HW / SW communication interfaces and to be part of the development team for the realisation of the communication protocol.



08CT6202000208



Feb 2020 - Jun 2023



€ 1.922.544,00



PMF Research



PO FESR Sicilia 2014-2020



MINERVA

Innovative elearning methods and Virtual Reality in the company

The project involves the creation of an innovative corporate training platform, based on e-learning systems capable of integrating with training courses created in Virtual Reality (VR). The aim is to offer the user an innovative and stimulating learning environment in which digital educational contents are combined with objects or tools that show real-life situations.

This new platform allows manufacturing companies to experiment with new ways of corporate training, allowing the creation of immersive environments for learning the business processes related to the use of machines and equipment. Thus, it allows employees to simulate both the simplest operations, such as assembling the machine's components, and the more complex ones, which involve potential critical issues in the production process.

Through some devices (smartphones or tablets, viewers and 3D glasses) it is possible to guide the worker within an environment that perfectly recreates the reality. The advantages are in terms of worker safety, as it enables to learn dangerous operations at zero risk to health, and in terms of company costs, as it eliminates the costs related to human errors typical of inexperienced workers.

Two JO Group companies participate in this project: HT is responsible for creation of elearning courses, and PMF is responsible for the technical development of the platform.



F/190045/01-02-03/X44



Nov 2019 - Nov 2023



€ 901.025,00



**PMF Research +
HT Apps**



PON «Imprese e Competitività» 2014-2020 FESR

PRIME

Reasoning Integrated Platform, Multimedia, Expert

The PRIME project aims at creating a sophisticated tool to support law enforcement agencies in the prevention of organized crime, tax evasion and corruption. The techniques employed by the project regard the application of probes and sensors for the monitoring of the environment and systemic processes.

HT Apps contributes to the development of the general architecture of the system, as well as the development of mobile Android and iOS interfaces.



1424



Jan 2013 - Dec 2015



€ 1.251.860,52



HT Apps



PO FESR 2007-2013



PRIME

MVCS

Mobile Video Conference System

MVCS project finds a viable solution to multimedia convergence. The activity presented in the project plan aims at introducing new multimedia services relevant in terms of technological innovation, both for companies and private users. The main objective of the initiative is to develop a mobile/fixed convergent solution which can connect in videoconference all types of mobile devices through a traditional internet-based video communication system. Our innovative solution allows the use of a PDA as a video-mobile IP phone, able to manage video-calls among PDAs, 3G terminals and fixed PCs. The research programme envisages the analysis of topics concerning the interoperability among different networks (CDMA and packet based) and transmission techniques of audio/video data flows among WiFi and UMTS networks.

PMF Research contributes to the activities development based on available transport networks to introduce new multimedia services useful either for corporations either for private users.



199.IT.16.1.PO.011/3.14/5.2.13/0322



Oct 2006 - Jun 2008



€500.000,00



PMF Research



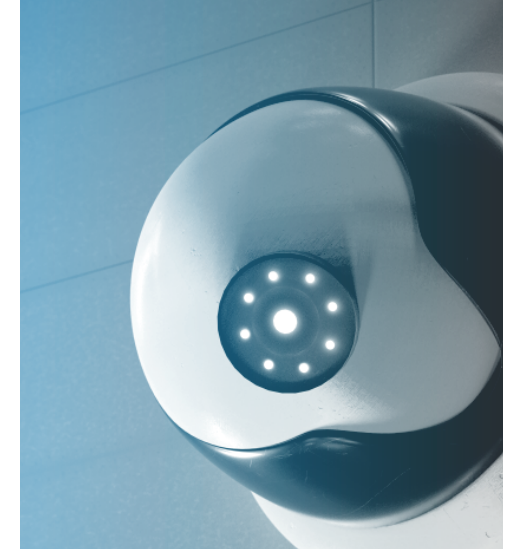
POR Sicilia 2000-2006



VESTA

VESTA involves the construction of a security system based on innovative short-range technologies. The system is based on a virtual cloud unit that collects information from the sensors, processes them and makes them available to users through web or app. Therefore the system signals dangerous situations in the moment they occur by detecting possible intrusions through audio and video inputs. Differently from traditional security systems, the sensors play an active role in the detection of possible intruders.

The contribution of PMF Research consists in the creation of a virtual control unit able to manage and monitor a network of sensors in a simple and optimal way. PMF Research manages the creation of the web and interfaces (Android and iOS).



F/050074/01-02/X32



Jan 2017 - Dec 2018



€825.721,26



PMF Research



**Horizon 2020- PON
2014/2020**

DOMUS SAPIENS

DOMUS SAPIENS project involves the construction of an advanced home automation system, based on innovative technologies, which allows monitoring of health status and habits of users in domestic environments. The system collects and processes data through a network of sensors placed inside the building and worn by people. Such sensors allow the monitoring of anomalous behaviour and patterns of behaviour to change for the well-being of the users.

HT Apps deals with the management and collection of data from the sensors, the semantic analysis of statistics and the implementation of the ontology. The latter is elaborated thanks to a profiling algorithm in order to allow a quick and intuitive initial configuration and the creation of server and web interface.



F/050207/01-02-03/X32



Mar 2017 - Aug 2021



€ 1.220.007,50



HT Apps



Horizon 2020- PON
2014/2020

AMELIE

Advanced framework for Manufacturing Engineering and product Lifecycle Enhancement

The AMELIE project is a methodological and technological platform for the optimization of the lifecycle of a product. The project seeks to analyse all the steps of the product lifecycle, in order to follow the evolution of production phases and facilitate the relationships between workers.

PMF collaborates in the definition of information flows related to the business, as well as for the definition of services infrastructure required to support the business itself. PMF participates in the creation of the business infrastructure and flow management subsystems.



PON03PE_00206_1



Jan 2016 - Dec 2023



€14.380.970,00



AMELIE



PMF Research



PON 2007-2013

VOLCAN GUARD

Monitoring of inertial elements and gas in volcanic sites

The VOLCAN GUARD project aims at developing a network of low cost sensors to monitor the variation of some inertial elements and gas concentration in the atmosphere. The purpose of this monitoring network is to provide not only accurate estimates of observed variables (light, temperature, vibration) but also a qualitative indication of how these parameters are changing. The innovative nature of the project consists in the ability of this tool to develop prompts on the phenomenon measured and provide extremely useful information necessary to the generation of a state of alert.

PMF Research realises the web interface and implements the algorithms for the analysis of available data. Interaction with the server is managed through queries exchange with the database implemented within the server and through responses in JSON format.



1481



Nov 2012 - Dec 2015



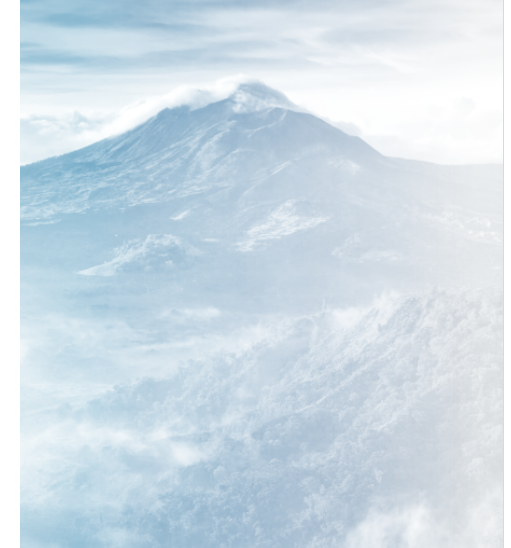
€ 819.670,10



PMF Research



PO FESR Sicilia 2007 - 2013



SEMANTIC SICILY

SEMANTIC SICILY is a project led by PMF Research which involved 23 Sicilian SMEs. The consortium goal is the research and development in the field of the Semantic Web for the increasing number of types of information. The technological platform employed in the project is based on modern techniques of cloud computing, which means that instead of running locally, the applications run in a data center shared by the partners of the project. The objective of the project is thus to develop a semantic core platform shared by all partners and distributed on cloud computing hardware.

The semantic core platform is used as the starting point for the development of applications in the field of e-learning, semantic document management, semantic networks, voice recognition and text mining, real-time translation, reverse engineering, semantic web gis, ERP, etc.

PMF Research incorporates a semantic engine purposely made by CNR into the e-learning platform. The integration allows the insertion of supplementary material related to the contents of the platform itself.



01CT6202000042



Sep 2012 - Dec 2015



€ 1.614.693,52



PMF Research



**PO FESR Sicilia 2007
-2013**

INDOOR LOCATION

Indoor Location and assistive mobile technologies

The Indoor Location project consists of a “social application” Client/Server addressed to the enhancement of commercial and non-commercial services in the field of healthcare, accessibility and disabilities.

The project idea is developed in close collaboration with researchers from the University of Catania and its main intent is to build a platform and an indoor system that provides functional, heterogeneous services for private agencies with particular attention towards their implementation on mobile devices.

The system is based on the latest technologies and provides useful services such as the ability to link and communicate, geolocation, reproduction and use of multimedia tools, etc.; as well as the creation of an indoor localization system capable of referring to customized maps.

The role of VITECO in the implementation of the project concerns the creation of the platform, the web client and the mobile client for both users and admins.



VITECO



G63F11001420004



Sep 2012 - Feb 2013



€ 240.000,00



**PO FESR Sicilia
2007-2013**

SECESTA

Network of sensors for monitoring of volcanic ash in air transport safety

SECESTA project consists of a network of sensors for the monitoring of volcanic ash in the air and transport safety. The atmospheric dispersion of ash produced by the explosive activity of volcano Etna is a significant risk factor for Eastern Sicily and in particular for the area surrounding the city of Catania. The project is developed by PMF Research in close collaboration with the University of Catania and local research centers. SECESTA implements a monitoring system of volcanic ash that can pinpoint the exact location of pyroclastic materials in order to provide warnings and recommendations in timely aeronautical users.

PMF Research develops the management software platform. In addition, the company creates the web interface and implemented the algorithms required to monitor the ash flow. Communication flow with the server is managed through API realized with the contribution of the partners. PMF Research is also in charge of dissemination and exploitation of project results.



G53F11000040004



Jul 2011 - Feb 2015



€1.518.686,00



PMF Research



PO FESR 2007-2013



RESIMA

Smart sensor networks and Mobility Assistant to the elderly and disadvantaged people

The project RESIMA aims at developing a methodology based on the use of multi-sensory architecture and computational intelligent paradigms to improve the indoor use by the elderly and vulnerable people. The system employs a network architecture in which multisensory nodes are responsible for monitoring the location of users within the environment and the state of the environment. In this way it is possible to estimate the interaction between user and environment and provide to the blind person the necessary information for a secure and efficient use of the environment.

HT Apps ensures the correct execution of research and development activities and their coordination. HT Apps develops and implements the decision-making system which allows to step in support actions for the user, based on user-acquired information and surrounding environment.



G63F11000590004



Jun 2011 - Feb 2015



€ 919.236,00



HT Apps



PO FESR 2007-2013



Resima

SAGRO

Photovoltaic panel of third generation: development of solar celles sensitized with organic colorant from Sicilian vegetal products

The aim of SAGRO project is to produce, through experimental research and development, new photovoltaic systems of third generation. The idea is to use Sicilian vegetable products as photo-active raw material, in order to reduce manufacturing costs. Specifically, the developed cells are the photo-electrochemical ones that are sensitized with organic colorant. This kind of cells have been studied for over 20 years (indicated by DSSC stands for Dye Sensitized Solar Cell). The project is developed in collaboration of University of Catania.

JO Consulting provides its competencies in project management.



G63F11000470004



Oct 2011 - Jul 2014



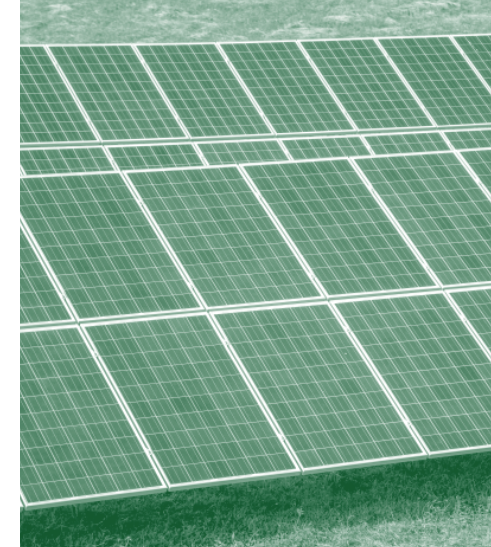
€2.169.525,32



JO Consulting



PO FESR Sicilia 2007-2013



SAGRO



+390950936053



info@jogroup.eu



info@joconsulting.eu



www.jogroup.eu