COLLABORATIVE GRANT SCHEME
FOR R&D ORGANIZATIONS AND
PRIVATE SECTOR ENTERPRISES

Ministry of Education, Science
and Technological Development

INNOVATION
FUND

WORLD BANK GROUP

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THE COLLABORATIVE GRANT SCHEME PROGRAM

ANNUAL REPORT

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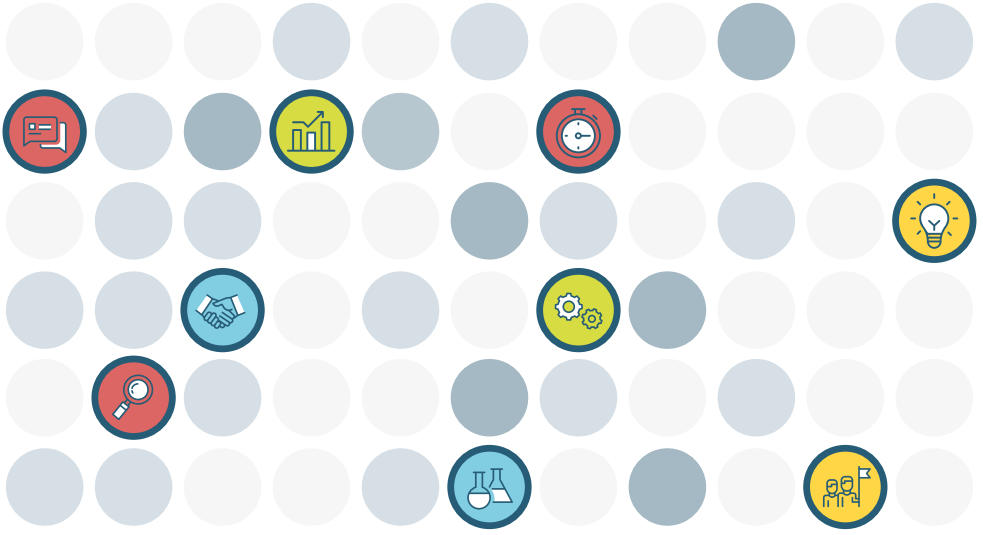


The Collaborative Grant Scheme program was designed with the technical assistance of the World Bank in the framework of the second component of the Serbia Research, Innovation and Technology Transfer Project, which was funded by EU IPA 2013. The implementation of the program was financed through the Direct Grant Agreement – "Creating a Comprehensive R&D Collaboration" signed between the Innovation Fund and the Ministry of Finance (Department for Contracting and Financing of EU Funded Programs) on February 5, 2016. Through this Agreement, a total of EUR 3.4 million was secured, of which EUR 2.4 million from EU IPA 2013 and EUR 1 million from the Ministry of Education, Science and Technological Development of the Republic of Serbia.

The time frame for the implementation of the Direct Grant Agreement is from February 2016 to March 2019.

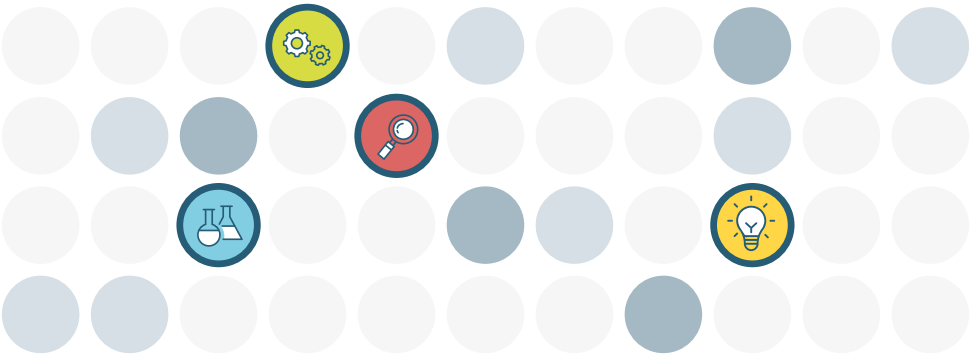
Goal of the program

The Collaborative Grant Scheme Program (CGS) is designed to incentivize private-sector companies and public-sector R&D organizations to engage in joint scientific research and development projects with the goal of creating new commercially viable products and services, as well as innovative precompetitive technologies with significant future impact and market potential.

Applicants

Eligible applicants are consortia engaged in developing new commercially applicable technologies, product and services from all fields of science and technology.

The consortia need to consist of at least one Serbian micro, small or medium private-sector company and at least one Serbian registered public sector R&D organization. Consortia may not have more than five members.



Funding

Within this program, the Innovation Fund provides co-financing for research and development projects by granting up to **EUR 300,000** per project. The IF co-financing covers a maximum of 70% of total eligible project costs, with mandatory consortium co-financing of at least 30% if the consortium's lead applicant is a micro or small enterprise. If the consortium's lead applicant is a medium-sized enterprise, the IF can cover a maximum of 60% of total eligible project costs, with minimum mandatory co-financing from the consortium of 40% of the total project budget.

Duration of the projects

The maximum project implementation period is up to **24 months.**

RESULTS

The first public call for proposals for this Program was opened from June 21st to September 23rd 2016. A total of **14 projects** were approved for financing in this pilot public call, with the IF providing support in the amount of **EUR 3 million.**

The implementation of all 14 supported projects started in the first quarter of 2017 and was completed by the end of February 28, 2019

Through these developmental initiatives:

- 12 new products have been successfully created,
- 5 advanced prototypes were produced, which will be converted into final products by the end of the year,
- 3 new technologies and technological processes for obtaining high added value products have been mastered and confirmed,
- 5 projects started generating commercial results by selling their innovations and it is expected that the true effects of these completed development activities on the business performance of these companies will be seen in the next two years,
- In addition, 5 projects saw technology transfer completed between the members of the consortium, and in this way knowledge and intellectual property originally derived from the field of scientific research organizations in the public sector were mobilized.

The Collaborative Grant Scheme Program

AWARDEES

AGROUNIK

Consortium leader: Agrounik, Beograd
Main partner: Institute for plant protection, Belgrade
Partner: Biounik, Belgrade
Project: "Bacteriocin based product against Erwinia amylovora, the Fire Blight Pathogen"
Sector: Food and agriculture

Project budget:
428,510 EUR

IF participation:
299,957 EUR

The result of this successfully implemented project is the "ERWIX" formula – a brand new registered product for protecting plants from the fire blight pathogen, which will enable fruit producers to reduce the vast economic damage that originates from the spread of this bacterial infection. Apple, pear and quince growers who use ERWIX, which is applied as a biofilm, will ensure that their fruit is protected from the expansion of this harmful bacteria. ERWIX accomplishes this by relying on the formula's "benevolent" bacteria which produce bacteriocin surfactin and have an antimicrobial effect on pathogens. During the formula's testing on three locations over the last two years, the intensity of the infection on pears was reduced by 96% on the branches and 88% on the flowers when compared to control groups.

ERWIX is completely ecologically safe, doesn't leave toxic residue in food and the environment, and also doesn't cause phytotoxicity and withdrawal. The resistance of the pathogen to the benevolent *Bacillus subtilis*, which is a component of ERWIX, has not been detected so far. The formula can be used in organic production, and its application enables better quality fruits and higher yield, and therefore also profit for the agricultural producers. ERWIX was presented in 2018 at the 15th Plant Protection Advisory Board organized by the Plant Protection Society of Serbia, and in 2019 at the fruit advisory council of Gruža. During 2019, ERWIX will be placed on the markets of Serbia, Croatia, Slovenia, Macedonia and Greece.

BANKOM

Consortium leader: Bankom, Belgrade
Main partner: Faculty of technology and metallurgy, University of Belgrade
Project: "High protein soybean-based probiotic feed with increased digestibility"
Sector: Food and agriculture

Project budget:
492,106 EUR

IF participation:
294,968 EUR

The technology which was developed with the support of the Innovation Fund should enable the production of high-protein soy-based products with probiotic and prebiotic properties for human and animal nutrition.

In a world where the human population has an exponential growth trend and where natural resources for nutrition are becoming more and more threatened and limited, the food production industry is looking for solutions that could meet the growing demand for meat proteins without endangering nature and worsening the ecological footprint. The product that the consortium has developed under the trade name "Tesla Protein", allows for significantly higher utilization of soy, which is the main source of protein for animal feeding. The

current utilization of nutrients in standard soybean products is about 60%, while "Tesla Protein" has a utilization rate of about 92%. In addition, it also improves animal health, which allows for a reduction in the use of medicaments and increases productivity.

The product was presented at one of the largest European fairs "Euro Tier 2018" in Hannover (Germany) at the end of last year, where the interest for this product exceeded all expectations. Based on this response from the market, the consortium leader "Bankom" decided to invest significant additional own funds in order to start the industrial production of "Tesla protein" and is currently in the final stage of preparations for starting production. It is expected that first financial results will be generated in 2019, with full production potential being achieved in 2020.

EUGEN CHOCOLATE

Consortium leader: Eugen Chocolate, Gložan
Main partner: Faculty of technology, University of Novi Sad
Project: "Development of Innovative Chocolate Products Fortified with Bioactive Compounds"
Sector: Food and agriculture

Project budget:
100,810 EUR

IF participation:
70,567 EUR

FINEST HANDCRAFTED CHOCOLATE
chocolate Eugen

УНИВЕРЗИТЕТ У НОВОМ САДУ
ТЕХНОЛОШКИ ФАКУЛТЕТ НОВИ САД

Innovative technologies in the food industry are focused on creating functional foods which contain ingredients that improve specific body functions. Chocolate does not have a reputation of nutritionally valuable food, but it is very popular and represents a convenient product for increasing the daily intake of nutritionally valuable components. Processing and storage of food products can often lead to instability and degradation of bioactive compounds which limits their potential health benefits. Encapsulation of bioactive compounds in suitable food-grade carriers enables their easier incorporation into food products and offers longer shelf life, as well as improved bioavailability once these compounds are ingested.

The overall objective of the project was to develop functional chocolate products enriched with encapsulated phytochemicals originating from sources such as green tea, blackberry and blueberry. The presence of any additional material influences the familiar physical and sensory features which generally attract consumers to like chocolate. The main challenge was to optimize the production of nutritionally enriched chocolate in terms of composition and processing parameters, especially considering the resistance of bioactive components. This included a series of laboratory and industrial test runs under controlled conditions and comprehensive quality analysis, shelf life testing, package design and product labeling. Introduction of nutritionally enriched chocolate in the product range of Eugen Chocolate contributes to the positioning of the company in the functional foods market. Looking ahead, the expected expansion of this market in the region will create the conditions to generate profits and increase in the total turnover of Eugen chocolate.

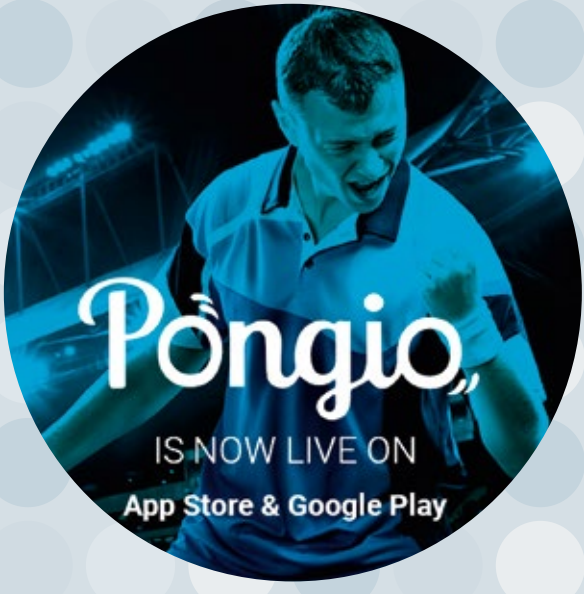
GECKO SOLUTIONS

Consortium leader: Gecko Solutions, Belgrade
Main partner: Faculty of mechanical engineering, University of Belgrade
Project: "S3T"
Sector: IKT

Project budget:
220,750 EUR

IF participation:
149,733 EUR

In the world of table tennis, for the past 50 years the tracking of player performance and analyzing their games was done by going over the video recordings of a match after it would end. This method requires significant resources and most of the data received this way, such as the characteristics of a match or a particular mistake made by a player, can be observed only by other professionals. "Pongio", the application developed jointly by "Gecko Solutions" and the experts from the Faculty of mechanical engineering from the University of Belgrade, is the first interactive tool for table tennis which allows for measuring of striking speed, recording your opponent and analyzing it in real time or after the match.



The app uses mobile phones (Android or OS) or tablet devices, it's free to download and can be used in broader social circles. It's designed for professionals, occasional competitors and enthusiasts and it allows for comparing the match parameters, strike tracking, improving one's style or technique based on the videos

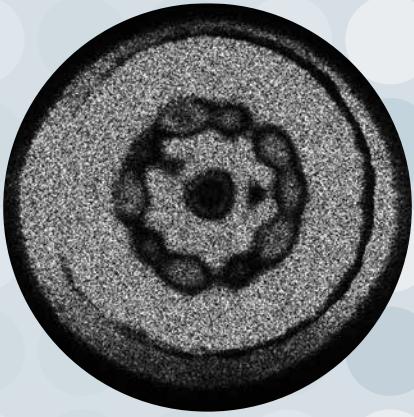
GEOGIS

Consortium leader: GeoGis, Belgrade
Main partner: Institute of physics, Belgrade
Partner: Institute of physics, Belgrade
Partner: Institute Mihajlo Pupin, Belgrade
Project: "Drone Surveying Of Acoustic Noise Sources And Implementing In Gis"
Sector: Environment and climate protection

Project budget:
334,955 EUR

IF participation:
234,000 EUR

This project codenamed "GRAMACA" focuses on the development of a device for automated airborne observation and recording of sound sources, and represents the first device of its kind. The data obtained through the deployment of this device can be used for acoustic mapping and zoning, designing environmental noise protection measures and implementing modern concepts of a sustainable environment such as "smart city", "healthy city", or "blue green dream".



By integrating a 2-pi acoustic camera synchronized with a wide-angle video camera and a precise GPS module, the device records high-resolution and high-selectivity audio and video data. The record contains metadata about detailed characteristics of sound sources in the zone of flight, including position information, sound level, spectral content and all other relevant parameters for the characterization of the sound source. All this data allows for the creation of a georeferenced map of sound sources, which is then added as a new layer in a Geographic Information System (GIS). Two prototypes of ultralight acoustic cameras were constructed, and MEMS microphones with membranes made of the lightweight material graphene were raised to a higher technology readiness level and are expected to be an integral part of the next generation of devices.

GREENLAB

Consortium leader: GreenLab, Žiča
Main partner: Institute for molecular genetics and genetic engineering, Belgrade
Partner: Invetlab, Adaševci
Partner: Phytonet, Belgrade
Project: "Development of technological processes for production of innovative probiotic products for prevention and treatment of intestinal infections in animals"
Sector: Food and agriculture

Project budget:

299,550 EUR

IF participation:

209,684 EUR

According to the World Health Organization data, antimicrobial resistance is one of the biggest threats to global health. In line with the EU animal health strategy "Prevention is better than cure", it is necessary to establish new alternative approaches to supplant the use of antibiotics in animal husbandry. This innovative probiotic was developed precisely as an adequate replacement for antibiotic use in prevention and treatment of intestinal infections in farm animals. During this project, two probiotic formulations were designed – fermented liquid probiotic for local distribution, and lyophilized probiotic as

feed additive for global distribution. The mixed probiotic culture was previously designed by IMGGE, based on three thermophilic lactic acid bacteria natural isolates belonging to species that are on the QPS list of EFSA.

This probiotic has a unique probiotic potential, including antimicrobial activity against hardly curable pathogens (enterotoxic Escherichia coli (ETEC), Clostridium difficile, Clostridium perfringens and Salmonella sp.), boosting of protective immune response and improving the gut microbiota diversity. The technology for large scale production of fermented and lyophilized probiotic formulations were also developed and standardized within the project, while the efficacy of this innovative probiotic was demonstrated in farm clinical trials on pigs, cows, and poultry. The liquid fermented probiotic is registered at Veterinary Directorate, Ministry of Agriculture and available on the Serbian market since March 2018. The lyophilized probiotic will enter the market before the end of 2019. The national patent describing the use of mixed probiotic culture was approved in Serbia, the PCT application was published and the national application for Turkey was submitted in 201

LMB Soft

Consortium leader: LMB Soft, Niš
Main partner: Electronic faculty, University of Niš
Partner: Innovation Center of Advanced Technologies, Niš
Project: "Development of new generation of sterile PVC tubes docking devices for medical blood bag system"
Sector: Medical and therapeutical devices

Project budget:
401,660 EUR

IF participation:
281,162 EUR

The consortium helming this project has developed a new sterile docking device (SDD) for connecting medical (PVC) tubes used in blood bag transfusion systems while fulfilling the key request in this industry, which is to maintain absolute sterility of liquids inside the bags despite heavy exterior bacterial contamination. Existing devices provide sterility by heating the tubes with electric heaters or laser beams, but due to the poor thermal conductivity of PVC tubes it becomes necessary to use high temperature (i.e. energy) for a sustained period of time in order to reach the melting point. The aligned tubes

move towards each other only after they've been heated, which exposes the end parts of the tubes to the environment and potential contamination, while also requiring additional heat in order for them to not cool down before being welded and to preserve sterility.

The key innovation in this new device is to apply a very e nergy efficient dielectric heating method based on an RF electromagnetic field (using the principle found in microwave ovens). Prior to being welded, the ends of the tubes are sealed and leaned against one another, making the compound significantly less exposed to environmental influences. Subsequently, the VF field between the electrodes holding the tubes is engaged and the dielectric heating starts with the maximum power at the connection point. The heat causes melting of the plastic at the ends of the tubes and welding is then performed. Thus, the ends of the tubes are less exposed to contamination in an environment heated directly to the point of melting (greater than 200 degrees C), which prevents contamination within the system, even in the presence of non-uniform material on the weld. LMBSoft plans to offer these devices to existing blood transfusion clients, as well as to open new markets.

MONT STUBLINE

Consortium leader: Mont Stubline, Stubline
Main partner: Faculty of mechanical engineering, University of Belgrade
Partner: DenHeat, Denmark
Project: "Development of Innovative Modular Helicoid Heat Exchanger for Organic Waste"
Sector: Energy and energy efficiency

Project budget:
305,770 EUR

IF participation:
212,266 EUR

It's a known fact that agricultural production yields large amounts of organic waste and this wast e is often dispersed on soil without control, thus contaminating the environment. On the other hand, organic waste can be used for energy production (biogas) and obtaining high quality fertilizer, thus giving multiple benefits. That is what biomass treatment plants are built for, and the energy efficiency of these plants is crucial for their economic feasibility. An important part of this process is using the excess heat from the treated biomass to preheat the incoming raw biomass which is at ambience tempera-

ture. Since biomass is a heterogeneous fluid prone to sedimentation, this heat exchange has to be done with specialized equipment.

"Mont Stubline" and its consortium partners "DenHeat" and the Faculty of mechanical engineering from the University of Belgrade have developed an innovative heat exchanger solution to meet the market's demand. After manufacturing 3 prototypes, 1:1 test plant and mobile test-rig for in-situ testing on existing plants, a series of performance tests has been carried out. This resulted in design and process regime optimization of the heat exchanger. Since the clients recognized the benefits of a tailor-made solution and serious approach to testing, first orders for the new exchanger came in sooner than expected. Currently, 4 HEX batteries are being installed at "HOLSTED" biogas plant in Denmark.Client interest for 2019. and 2020. looks very promising, and negotiations have started with industry's biggest players – German energy distributor "EON" and Danish plant owner "Nature Energi A/S". After a promising start, "Mont Stubline" are poised to prove that "Made in Serbia" can stand for engineering ingenuity and top quality, when the approach is right.

NIRI 4NL

Consortium leader: NIRI 4NL Research And Development, Niš
Main partner: Faculty of science and mathematics, University of Niš
Partner: KP Advertajzing, Niš
Project: "Classifieds Guard"
Sector: Software and application development

Project budget:
119,700 EUR

IF participation:
83,750 EUR

NIRI

UNIVERZITET U NIŠU
PRIRODNO-MATEMATIČKI FAKULTET

kupujem prodajem

Thanks to the financial support granted by the Innovation Fund, the consortium led by NIRI 4NL has implemented a project named "Classified Ads Guard" for automated classification of small advertisements, designed for online retailers who operate mostly through classifieds. The ad classifier was developed in the period from April 2017 to March 2018 with the help of experts from the Faculty of Sciences and Mathematics, University of Niš. This software solution uses advanced artificial intelligence algorithms, which makes the classifier very accurate and easy to apply in different language, geographic and domain barriers.

The benefits that the smart Classified Ads Guard brings to Internet advertisers are:

- 20 times faster upload of internet ads by the end user;
- More precise classification of ads, and consequently easier search of desired products/services;
- Reducing the manual work of moderators up to 50% of the time spent by moderators to verify the correctness of the classification;
- Raising the quality of services and the reputation of Internet users.

"NIRI 4NL" already has excellent relations with the largest Serbian Internet ad platform KupujemProdajem.com, and based on this model of cooperation, "NIRI 4NL" plans to build links and cooperate with similar companies in the European market. This cooperation is very impo rtant because it has elements of a strong partnership through which valuable information about the market is obtained, as well as information about the problems and needs of internet advertisers, so that the classifier can be constantly improved in accordance with this input.

NovelIC

Consortium leader: NovelIC, Belgrade
Main partner: School of electrical engineering, University of Belgrade
Project: "HUman DEtection Sensor, HUDES"
Sector: Electrical engineering

Project budget:
291,302 EUR

IF participation:
203,911 EUR

The consortium led by the Belgrade-based "Novelic" has developed a radar sensor based on p atented technology for detecting human presence in dedicated areas. By using radio technology, the sensor remotely detects presence, movement, breathing and heartbeat of the observed person.

The primary application is monitoring of drivers and passenger in the car interior. Smart cabins of future cars would need to observe the vehicle's interior to support passenger safety, well-being and preliminary health check. Moreover, as of 2022, the monitoring of life presence inside the cabin will be mandatory in some markets, with a special focus on babies left in cars after the engine has been shut down.

Within this project, a seat occupancy sensor called "Cabin Sense" was developed, which can detect whether the seat is occupied and what are the vital signs of a person. Several leading automotive companies are already evaluating the module and in 2018 one of the major automotive suppliers started a pilot product development based on the sensor, and thus the sensor has generated its first revenue. On top of that, Novelic is the first company in Serbia and one of the first in the world, which has developed its own mmWave radar chip (RC060A1) to be used in the second generation of the seat occupancy sensor. **This is the first ever chip developed in Serbia by a Serbian company.**

In the last two years, the sensor engineering team around this project has grown from 5 to 25 people. Several researches from the universities in Serbia are included in development, and five patents in USA and Europe have been granted. The technological plan is to include the company's own chip into the commercial sensor module and improve the algorithms, in order to get the most feature-rich and cost-optimized product of this kind in the world. The business plan by 2022 is to have at least one vehicle model on the market which contains a sensor developed by Novelic.

OTTO BOCK SAVA

Consortium leader: Otto Bock Sava, Kragujevac
Main partner: Faculty of engineering, University of Kragujevac
Partner: Sim-Cert, Kruševac
Project: "Ultimate Cca – Oap Manufacturing System"
Sector: Machines and mechanical engineering

Project budget:
414,408 EUR

IF participation:
289,671 EUR

The result of the project was a successfully developed new technology in the form of an integrated system for production of orthopedic aids, based on the formation of a digital chain of compatible devices and the exploitation of CAD/CAM /CNC technology with the use of inverse engineering. This production concept is flexible, tailored to smaller markets, shortens the delivery time of orthopedic aids to customers and is significantly cheaper than the classic model of centralized production of orthopedic aids. Also, the new production concept overcomes the problems of interoperability and software compatibility through complete integration of the process.

As result of this technology's implementation, several new technological processes were developed: production of orthopedic insoles; spine corsets in children aged up to 16 years; positive casts and prostheses/orthoses.

In addition, the system has led to significant improvements of services provided to customers, related to time reduction and fewer client visits during the process of designing and finalizing orthopedic aids, as well as the ability to create individual orthopedic aids "remotely".

New products are fully medically compliant, and the technological processes are carried out in accordance with relevant national regulations and international standards.

The plan for further development of the innovation is commercialization of products, as well as upgrading of the integrated model through purchase of new devices and investments in CAD Cam technology that will be applied in the process of production of individual prosthetic and orthotic medical aids.

The target markets are Serbia and countries in the region (Bosnia and Herzegovina, Macedonia, Montenegro, Bulgaria and Romania) and developing countries on the global level. The implementation of the project has had a very positive impact on the company's annual revenue increase. In 2018 with the use of this new technology, annual revenue increased 288% compared to 2017, when the standard technological process for the production of orthopedic aids was used. For 2019, "Otto Bock Sava" Ltd signed 3 million EUR worth of contracts and the work related to these contracts has already begun.

QUADRA GRAPHIC

Consortium leader: Quadra Graphic, Belgrade
Main partner: Institute of physics, Belgrade
Project: "Upscaling Teslagram® technology based on variable and complex biological structures for security printing"
Sector: Life sciences

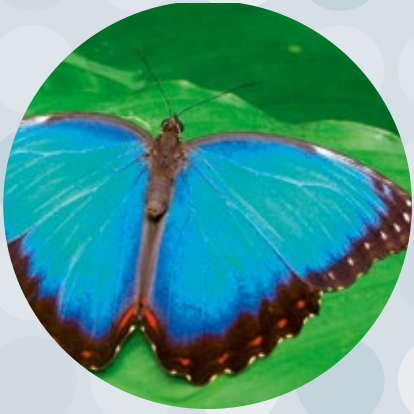
Project budget:
429,918 EUR

IF participation:
300,000 EUR

QUADRA GRAPHIC

"Teslagram" is a technology for protection against counterfeiting by attaching scales obtained from butterfly wings to valuables. "Teslagram" is unique in applying a distinct uncopiable security element to each and every protected item. With "Teslagram", every banknote, every credit card, every item of clothing and every drug pill becomes a unique uncopiable item.

Within the project, "Teslagram" has grown from an idea to a complete technology ready for implementation across a spectrum of industries. We have developed farming of butterflies, harvesting of scales, printing the scales on plastic and paper substrates in industrial setting, optical devices for acquiring



images of printed scales, and software for recognition and authentication. The technology is protected by patents in Europe, United States, Canada, Korea, Japan and China.

The perfected printing technology makes the printed cards durable, resistant to scratching and bending, and resilient in warm, humid and mechanically adverse environments. Sales of the improved telecom vouchers developed through this new technology has significantly grown in the African and Asian markets as a direct consequence of development efforts supported by this project.

The partnership Between "Quadra Graphics" and the Institute of Physics Belgrade is going to persist in further development of applications and industrial procedures. The technology has earned a Seal of excellence in the European Horizon 2020 program and "Quadra Graphics" is going to supply the printed butterfly scales for further applications of "Teslagram". As goods keep deriving more value from an original idea, brand name or exclusivity and less from the physical object in the customers' hand, the consortium is well prepared to satisfy the growing demand for items of proven origin and certified authenticity.

TETRAGON

Consortium leader: Tetragon, Čačak
Main partner: Faculty of technology and metallurgy, University of Belgrade
Project: "Development of eco-friendly water-born polychloroprene contact adhesives"
Sector: Life sciences

Project budget:
108,278 EUR

IF participation:
70,346 EUR

The innovation developed through the implementation of this project is a new eco-friendly water-based adhesive used in mattress, pillow and furniture industries. In addition to achieving quality, this innovative product cares for the health of all participants in the process – the production workers at Tetragon, the employees of the customer companies which procure this adhesive, as well as the users of the finished products. Eco-friendliness was also confirmed by obtaining the prestigious OEKO-TEX certificate.

This adhesive is intended for bonding the joints of two polyurethanes, textiles or latex. The consortium was focused on solving the problem which required the replacement of traditional adhesives based on solvents with adhesives on

based on water, which would also rival the characteristics of the former. The request from the market was to achieve very good initial gluing, to obtain a final gluing after only six hours, as well as to avoid potential problems related to applying the substance in different ways. With this in mind, the innovation was carried out on two types of glue. The first type of adhesive is designed for roller application and the other is based on spray application by using a spraying pistol.

The required quality of the adhesive was achieved and the placement of this product on the market has already begun, so that in 2017 a total of 826 kg was sold, followed by 9.690 kg in 2018, which generated the first revenues of 2.500 EUR and 29.000 EUR in these two development years respectively.

The plan is to further improve the adhesives and expand the market in the country and abroad, with expected revenue increases to follow accordingly.

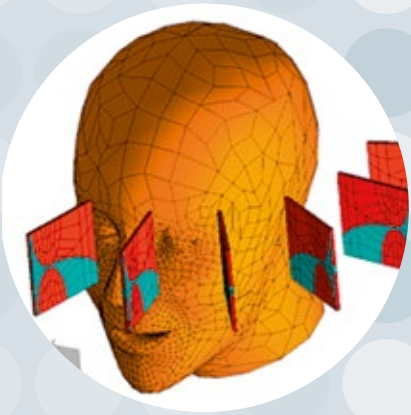
WIPL-D

Consortium leader: Wipl-D, Belgrade
Main partner: School of electrical engineering, University of Belgrade
Project: "New Generation of Electromagnetic Modeling Simulation Tools"
Sector: Electrical engineering

Project budget:
428,550 EUR

IF participation:
299,985 EUR

WIPL-D is dedicated to development of commercial software for simulation of phenomena and devices in wide field of electromagnetics (EM) with many applications in IT, automotive, aerospace, defense, and medical industry, amongst others. Due to the accelerated progress of technology, there are constantly increasing demands for more accurate and faster simulations, applicable to more complex and larger structures – from very low to very high frequencies, and using a variety of new materials. In response to these challenges, WIPL-D has engaged the Microwave group from the School of Electrical Engineering (SEE) University of Belgrade, which proposed an innovative concept



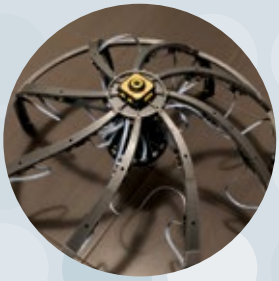
and a mathematical foundation for Ultra High Order Modeling. Using this mathematical foundation, WIPL-D and SEE have developed a "New generation of Electromagnetic Modeling Simulation Tools" under the project supported by the IF.

The innovative concept is implemented in two products: 3D EM Solver (WIPL-D Pro) and 2D EM Solver. Owing to these novelties, the simulation can be accelerated up to 10-100 times, and the accuracy can also be increased 10-100 times. Additionally, a new FEM Solver was developed in line with this innovative concept and added to the palette of WIPL-D tools, where it should enable handling of continuously inhomogeneous and anisotropic materials.A clear intent from targeted long-term customers (Bell Helicopter-USA, Cooper Antennas-UK, Israel Aerospace, Raman Research Institute-India, Aerial Oy-Finland, etc.) to invest in such more advanced software has been confirmed. Although the launching of the official versions of these software tools is planned for March 2019, the beta versions were already delivered for seven contracts in the total amount of 63,000 USD and 9,000 EUR for the 3D and 2D tools respectively. However, the full impact of this development is expected to be reached in the next 5+ years.

PHOTO GALLERY



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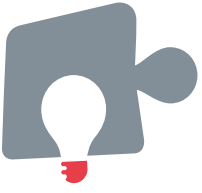

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