Stairway to Excellence
Cohesion Policy and the Synergies with the Research and Innovation Funds

Example of Synergies

JSC “Vittamed”

Lithuania

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Executive Summary

JSC “Vittamed” coordinated an FP7 project “Brainsafe”. A new, non-invasive absolute intracranial pressure (aICP) measurement device was developed during this project. Another FP7 project – “Brainsafe II” followed after the success of the first project. During the “Brainsafe II” the non-invasive absolute intracranial pressure (aICP) measurement device was upgraded and the final product was created. The EU SF provided support for introducing this product to the market.

The ERDF-cofunded national policy instrument „New Opportunities“ (under the Operational Programme for Economy Growth 2007-2013) provided support for the project “JSC “Vittamed” export development and promotion in foreign markets”, which aimed to introduce new neurodiagnostics technologies to the world market, find new business contacts and start product export.

Type of synergies

- Downstream
- Sequential funding

S&T field targeted by the synergies

- Health

The views expressed are purely those of the author and may not in any circumstances be regarded as stating an official position of the European Commission.
1. **Introduction**

The case presented in the following sections is one of the examples of synergies provided by the ‘Stairway to Excellence’ project in which different sources of funding have been combined to amplify the R&I investments and their impact on the economy and wider society.

As described in the guide ‘Enabling synergies between European Structural and Investment Funds, Horizon 2020 and other research, innovation and competitiveness-related Union programmes’,

synergies can be achieved through:
- **Sequential (or successive) funding** that use funds in separate projects built on each other;
- **Parallel funding** that use funds in separate projects complementing each other;
- **Simultaneous/cumulative funding** that brings together Horizon2020 and ESIF funds in the same project aimed at achieving greater impact;
- **Alternative funding** that reorients FP7/Horizon 2020 projects that were positively evaluated, shortlisted, but not funded given the limited budget, towards Structural Funds impact.

The combination of sources of funding is used to address two types of activities:
- **Upstream activities** build the appropriate capacities to perform research. They can be capacity building in physical capital (construction or improvement of research infrastructures, purchasing equipment, (including IT equipment and connections, data storage capacities), innovation infrastructures (LivingLabs, FabLabs, Design factories, etc.) and social capital (assistance for building networks, clusters and consortia).
- **Downstream activities** are focussed towards the market and the creation of economic value. They can be applied to research, development and demonstration activities, technology transfer and adoption; technology and innovation audits to identify potential demand for RDI results; proof-of-concept funding; pilot lines for first production; and pre-commercial procurement projects. There can also be activities to support the improvement of the innovation eco-system in a territory.

2. **Context**

The synergy between funding sources was not intended by the EU SF measure „New Opportunities LT“ (see below). Hence, the project coordinator could not indicate any specific constraints to facilitation of the synergies between national and international programmes.

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3. IMPLEMENTATION

Figure 1 maps the project chronologically, the research activities of the organisation and the type of funding. It aims to give a picture of relations between projects revealing planned or unplanned dependencies (synergies) between projects and their source of funding.

Figure 1: Diagram of chronology of the main projects involved in synergies

[Diagram showing relationships between projects]

Added value / complementarities created by the synergies
FP7 support helped development of a prototype of new technology and later on – the final product. A national EU SF measure “New opportunities” helped to introduce the product to the international market. ERDF funding enabled to find new business contacts and start production export.

Mechanisms facilitating the synergies
The synergy was not intended or facilitated by policy makers.

Main problems encountered in implementing the synergies
There are no problems related to the synergies to report. The only problems pointed out by the interviewees relate to the efficacy of public support reduced by the formal, technical and ‘desk-top’ selection and administration procedures, related for example to excessive accounting and procurement, long delays in allowing any minor changes in a project.

Suggestions to improve the synergies
While there were no suggestions on improving the synergies, the interviewee suggested that Lithuanian funding agencies should not create excessive requirements for project implementation and should allow more freedom for minor changes during the project.

Main motivations in implementing the synergies
This project is small and not complicated. The activities of the project are more than clear. Hence, the company could not miss this opportunity to get the funding for the useful activities that would be too expensive without funding.

Facilitating mechanisms for the take up of the scientific results
Not applicable.

Impact on the regional / national economy
The intended impact on national or regional economy is an increase in exports and sales of innovative products. Also, the technology developed during FP7 projects will have significant socio-economic impact to different social groups including medical community and patients, state and private medical insurance payers, SME’s and society as a whole. The device turns a complex invasive procedure applied to only the sickest patients in intensive care units (ICU) into one that is
portable, non-invasive, simple and quick to perform. BrainSafe technology will allow improvements in the current management of invasive ICP monitoring and the expansion of ICP measurements to a broader set of patients (children, elderly), other frequent conditions accompanied with intracranial hypertension (lower-risk traumatic brain injury (TBI), hydrocephalus, stroke, etc.) and settings (neurological clinics, emergency rooms, radiology, transplantology, sport medicine, aero-space medicine, etc.), thereby providing more immediate information to support better clinical decision-making. The primary impact of non-invasive method of ICP measurement will be on a large patient pool in which ICP monitoring is currently impossible, but in which the availability of a clinically reliable ICP estimate would improve the timeliness and accuracy of diagnosis and open up treatment options.

Figure 2 aims to position projects according to the activities they cover; from upstream (infrastructures, equipment, research activities) to downstream related activities (innovation, knowledge transfer, access to market).

**Figure 2: Diagram of the complementarities of the funds in the knowledge triangle / flow**

![Diagram of the complementarities of the funds in the knowledge triangle / flow](image)
4. RELATED PROJECTS

STRUCTURAL FUNDS PROJECT: “Vittamed” export development and promotion in foreign markets”:
- **SF funding scheme**: OP for Economic Growth, measure “Increasing business productivity and improving environment for business”, instrument “New Opportunities”.
- **Budget**: €63,886.7
- **Time frame of the SF funded project**: 2014 11 12 – 2015 06 23
- **Main objectives and type of costs covered**: The main objectives are to present the new neurodiagnostics technologies to the world market, find new business contacts and start product export. Product presentation of the companies and their products at international trade fairs and similar events are supported.

Name of the FP PROJECT: “Brainsafe”:
- **FP funding scheme**: Research for SMEs
- **Budget**: Project budget: 1,188,525€; JSC “Vittamed”’s budget: €785,015.28
- **Time frame of the FP funded project**: 2009 10 01 – 2011 09 30
- **Main objectives and type of costs covered**: The objective of the project was to develop a new technology for non-invasive aICP meter. The cost covered by the project are consumables, salaries and business trips.

Name of the FP PROJECT: “Brainsafe II”:
- **FP funding scheme**: Research for SMEs
- **Budget**: Project budget: €1,658,798; JSC “Vittamed” budget: €606,610.8
- **Time frame of the FP funded project**: 2012 09 01 - 2014 08 31
- **Main objectives and type of costs covered**: The main objective of the project was to develop a new device/product for the autonomous, calibration free, non-invasive, rapid, accurate and precise absolute intracranial pressure (aICP) determination. The cost covered by the project are consumables, salaries and business trips.
5. **ANNEX: DETAILS ON THE RELATED PROJECTS**

**SF (“New Opportunities”) funded project**

**Project title:** “Vittamed’ export development and promotion in foreign markets”

**Weblink:** [http://www.esparama.lt/projektas?id=40090&order=&page=2&pgsz=100](http://www.esparama.lt/projektas?id=40090&order=&page=2&pgsz=100) (in Lithuanian)

**Beneficiary (name of the institution):** JSC “Vittamed”

**Type of institution:** SME

**Budget:**

- **Total Investment:** €63,886.7
- **EU contribution:** €38,331.79
- **Other contributors:** €25,554.91

**SF/ESIF funding instrument:** “New Opportunities”.

**Time frame of the project:** 2014 11 12 – 2015 06 23

**Main project objectives:**
The main objective of the project is to introduce a device for the autonomous, calibration free, non-invasive, rapid, accurate and precise absolute intracranial pressure (aICP) determination for neurodiagnostics world market. The dissemination of information about this device in international medicine equipment fairs, conferences and congresses is must in order to achieve this goal. The project beneficiary believes that this project will enable them to find new partners and become recognized in foreign countries and to increase sales in global markets.

**Specific goals (expected output)**
Presentation of the company and newly created product at international trade fairs and similar events in order to find new partners and become recognized in foreign countries. For example, on 13th of November 2014 Vittamed presented its product at the exhibition of the Medtech & Diagnostics innovation summit in Germany.

**Collaborative work within the project**
There were no project partners.

**Type of costs covered:**
- costs related to the presentation of companies and their products at international trade fairs and similar events.)

**Main Results (expected)**
- To increase exports by more than 300%, so it would increase by €0.8m (SFMS, 2015).
- To find new export markets and partners.
- To increase awareness of this company in the world.

**Comment about preparation and implementation of the project:** This project is small and not complicated. Hence, Vittamed had no difficulties applying and implementing this project so far.
Difficulties encountered at the stage of drafting the proposal
The interviewees did not encounter any difficulties at the stage of drafting the proposal.

Concerns regarding the evaluation:
There were no concerns regarding the procedure of evaluation.

Difficulties during the implementation of the project
The interviewees did not indicate any difficulties during the implementation of the project, including high administrative workload, eligibility, complicated procedures, etc.

Facilitating mechanisms during the draft proposal/ implementation
Respondents believed that the main strength of the proposal was the exclusive quality of the product, which could be successfully introduced to the global market

The interviewees also suggested that there could be more synergies with other national policy instruments, however the participation was precluded by high administrative load of managing more complex projects. The enterprise should have made a decision not to participate in a number of other national EU SF calls because of this particular reason. Every small detail should have been strictly regulated. The whole process has been called an “administrative jungle”. One respondent suggested not to create excessive requirements and to allow more freedom for minor changes during the projects.
FP7 FUNDING: “Brainsafe”

Name of the FP project: “Development of a new, non-invasive absolute Intracranial Pressure (aICP) measurement device based on ultrasound and Doppler technologies”


Beneficiary: JSC “Vittamed”

Type of institution: SME

Budget
Total project budget:
- Total Investment: €1,188,525
- EU contribution: €895,517
- Other contributors: €293,008

Vittamed budget in the project:
- Total Investment: €785,015.28
- EU contribution: €593,377
- Other contributors: €191,638.28

FP funding instrument
- Funding scheme: BSG-SME - Research for SMEs
- Subprogram: SME-1 - Research for SMEs
- Call for proposal: FP7-SME-2008-1

Time frame of the project: 2009 10 01 – 2011 09 30

Main project objectives
The main objective of BrainSafe project is to offer an innovative technology for non-invasive and fast-and-easy intracranial pressure (aICP) diagnostics that can save 9,400 lives and increase the chance of survival and life span for additional 136,000 patients with TBI yearly. Today only invasive technologies are available for diagnostics of Intracranial Pressure (ICP) for patients with severe Traumatic Brain Injury (TBI). These technologies expose the patients to the risk of infection, bleeding, leak of fluids or loss of other body tissue, pain, hyperthermia as well as risks related to anaesthetics. Relative to these risks and complexity of the procedure, only 20% of all TBI patients get access to the diagnostics of ICP, leaving out 1,280,000 TBI patients without proper examination of their brain injuries in Europe yearly. The lack of early diagnosis of increased ICP causes 100,000 new long-term disabilities and 400,000 deaths each year for these patients. As promised in the project proposal, the innovative aICP measurement device will completely eliminate all the risks associated with invasive methods of ICP diagnostics.

Specific goals (expected output)
(1) To develop a new technology, based on Ultrasonic Transcranial Doppler system, for non-invasive aICP meter with a measurement accuracy of +/- 2 mmHg.
(2) To develop the technological requirements for a hand held aICP meter for easy access and simple use, without acquiring intensive training of health care personnel.

Collaborative work within the project:
Project partners:
Type of costs covered:
- Consumables (e.g. costs of electronic components of the technology);
- Salaries;
- Business trips.

Main Results
The project addresses the need for non-invasive ICP meter for routine clinical care. The project team created a device based on ultrasound technology which enables a fast, safe, and easy-to-use method of regularly measuring ICP accurately and reliably. The new device measure ICP directly and non-invasively, using the same patient specific calibration free principle as a standard non-invasive blood pressure measurement.

Difficulties encountered at the stage of proposal drafting
The interviewers indicated that minimal requirements for consortia were considered as very high. Some partners were formally added to consortium only to fulfil the minimal requirements, but not because of the project needs.

Concerns regarding the evaluation:
Interviewees indicated that there was a lack of transparency of evaluation procedure, “the impression from previous experience is that success highly depends on luck and on the mood of reviewer”. They also mentioned that some previous applications for Horizon 2020 projects were evaluated negatively, but without any negative or specific comments explaining the negative evaluation.

Difficulties during the implementation of the work:
Respondents faced the difficulty to foresee how exactly the project will develop, therefore, all the partners must be flexible.

Facilitating mechanisms during the draft proposal/ project implementation
There were no facilitating mechanisms during the draft proposal/ project implementation.

Other push – pull factors that may affect the R&I performers in applying/ being successful in FP calls
The interviewees believed that participation in FP7 enables to implement a large and difficult project which requires a lot of human resources and partners. Without additional funding this enterprise would not be able to implement such projects. They also added some pull factors, which are influenced by high competition in the FP7/Horizon calls. The preparation of the proposal for Horizon/FP7 not only requires a lot of time and other resources, but also distracts the company from its main activities. The potential participant has to carefully weight his opportunities and risks. In many cases the decision is not to participate in the call.

Which were the strengths of the proposal to become successful
The potential socio-economic impact of the project (see above).
Suggestions to policy makers to facilitate the participation of national R&I performers in H2020

The two phase selection procedure of projects could be improved. Now the success rate in the second phase is very low. The evaluators should select fewer projects for the second phase so the success rate in it would increase. The first phase does not require so much input as the second. So while the success rate increases in second phase, the risk of investing a lot of time and resources in preparing the proposal also decreases. The respondent believes that this way the participation of SMEs in Horizon 2020 would be facilitated.

The respondent does not believe that any active measures of the Lithuanian policy makers could support participation in Horizon 2020, or that synergies should be actively promoted. The only mechanism to facilitate the participation seen by respondent is the dissemination of information about Horizon 2020 opportunities, already performed by MITA.

Advise to R&I performers willing to apply

R&I performers should not waste time participating in the calls if the starting position (the idea, the partners etc.) are not very strong. However when a R&I performer decides to participate in a Horizon 2020 call, he/she should believe in that proposal and to put all the available effort to prepare the proposal.
FP7 FUNDING: “Brainsafe II”

Name of the FP project
Beneficiary: JSC “Vittamed”
Type of institution: SME

Budget
Total project budget:
- Total Investment: €1,658,798
- EU contribution: €1,274,000
- Other contributors: €384,798

Vittamed budget in the project:
- Total Investment: €606,610.8
- EU contribution: €469,939.6
- Other contributors: €136,671.2

FP funding instrument
- Funding scheme: BSG-SME - Research for SMEs
- Subprogram: SME-2012-1 - Research for SMEs
- Call for proposal: FP7-SME-2012

Time frame of the project: 2012 09 01 - 2014 08 31

Main project objectives
The overall objective of the project is to upgrade the device created in the Brainsafe project and to develop a fully working pre-production of non-invasive fully automatic non-invasive aICP measurement device with the clinically acceptable measurement precision (SD=±2.5 mmHg) and high accuracy (systematic error<1.0 mmHg) and producing final measurements within as short time as possible.

Specific goals (expected output)
1. Development of specialized Trans Cranial Doppler (TCD) ultrasound transducer hardware for continuous measurements of blood flow in the Ophthalmic Artery (OA) in two-depths simultaneously (intra and extra cranially), and with a measurement depth resolution of +/-1mm, with a required double Doppler signal/noise (S/N) ratio enhancement compared to current solutions.
2. Development of an algorithm and associated data processing software for the automatic location of intracranial and extracranial segments of the ophthalmic artery and Internal Carotid Artery (ICA).
3. Development of an electromechanically actuated drive system and pressurization system as integrated parts of the Brainsafe device. The associated communication protocols and firmware will be developed to automatically manipulate the ultrasonic transducer in order to precisely locate the required segments of OA before non-invasive ICP measurement and during non-invasive automatic ICP measurement process.
4. Integration of the ultrasound transducer, electromechanical actuators and control system to deliver a complete fully automated working system for performing an aICP non-invasive measurement by a non-highly skilled operator in 9 minutes or less.

**Collaborative work within the project:**

Project partners:
- SINGER INSTRUMENTS & CONTROL LTD, Israel
- MICROPLAST AS, Norway
- MEDELKOM, Lithuania
- KAUNAS UNIVERSITY OF TECHNOLOGY, Lithuania
- PHILIPS ELECTRONICS NEDERLAND B.V., Netherlands
- OSAUHING EESTI INNOVATSIIOONI INSTITUUT, Estonia
- ARTEC DESIGN OU, Estonia

**Type of costs covered:**
- consumables,
- salaries.

**Main Results**

Based on the technology created during “Brainsafe” project, the project team created a device for the autonomous, calibration free, non-invasive, rapid, accurate and precise absolute intracranial pressure (aICP) determination. The device was ready to be introduced to the market.

**Difficulties encountered at the stage of proposal drafting**

According to the interviewees, they did not encounter any difficulties at the stage of proposal preparation.

**Concerns regarding the evaluation:**

The interviewees did not indicate any concerns regarding the evaluation.

**Difficulties during the implementation of the work:**

Respondents pointed out that it is difficult to foresee all the challenges of the project in advance. For example, if one of the partners becomes unavailable (e.g. bankrupt), others could not adapt to the project, hence the consortium has to search for new partners.

**Facilitating mechanisms during the draft proposal/ project implementation**

The project partner, Kaunas University of Technology, received the financial support for FP7 application preparation costs of €2,896.2 from MITA. This support was only available for public research organisations and is unavailable for enterprises, so the project coordinator could not apply for this compensation. This was an unfair bottleneck in the current system of facilitating national participation in Horizon 2020.

**Other push – pull factors that may affect the R&I performers in applying/ being successful in FP calls (see above “Brainsafe”)**

**Which were the strengths of the proposal to become successful**

The interviewees specified that the potential socio-economic impact of the project (see above), could be the main strength that could become successful.

**Suggestions to policy makers to facilitate the participation of national R&I performers in H2020**

See the above (“Brainsafe”).
Advise to R&I performers willing to apply
See the above ("Brainsafe").
## Abbreviations

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<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>ICP</td>
<td>Intracranial pressure</td>
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<td>aICP</td>
<td>Absolute intracranial pressure</td>
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<td>EU</td>
<td>European Union</td>
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<td>FP7</td>
<td>7th Framework Programme</td>
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