

Trans Tech Diagnostics (TTD) fights cardiovascular diseases

Cardiovascular diseases are the number one killer in the European Union and cost the European community € 196 billion per year. € 106 billion of this budget is spent on health care, including diagnosis and treatment of patients. The rapidly ageing population in the border region creates the expectation that cardiovascular disease will have a strongly increasing negative impact on our society.

A large proportion of people with cardiovascular disease shows no serious symptoms during the development of the disease, and is therefore not under treatment. Better and earlier identification of these individuals with an increased health risk is highly desirable. Also, a proper diagnosis for already identified patients is essential to refine the therapy, and to have fewer side effects or complications.

'TTD' therefore focuses on the development of a diagnostic kit. This form of personalized health care is seen as the way to more efficient cardiovascular health care, versatile and with fewer additional health damages and costs to the individual and society. These efforts will eventually not only have a positive effect on health care, but also respond to the needs and demands of business and health care providers.

Theme: 1A INNOVATION - smart growth

Out of a total budget of € 3,160,000.00 Interreg contributes € 1,580,000.00 (50%).

Project manager: Maastricht University

CrossCare: matchmaker in the healthcare sector

The need for care for the Flemish and Dutch elderly will increase tremendously in the coming years. Other developments such as the growing group of elderly people living alone, the pressure on the labour market for health care and budget constraints are major challenges. To provide solutions in the border regions, research and innovation are necessary.

'CrossCare' aims to encourage, steer and accelerate innovation in healthcare. The project supports the development and implementation of innovations by offering an experimental cross-border testing ground in the form of Living Labs. They give companies or care organizations the opportunity to work out in a meticulous way a successful product or service. Six experienced Living Labs (Care Ville Innovage, LiCalab, Brainport Healthy Living Lab, CIC and EIZT) join forces. Every innovation project receives the customized support of one Flemish and one Dutch lab. Each lab guides developers with new or improved care concepts, services, processes and products and gives the opportunity to test it in practice. In this way the network of CrossCare offers a wide ecosystem wherein valuable partnerships can be developed.

Theme: 1B INNOVATION – smart growth

Out of a total budget of € 10.418.706,35 Interreg contributes € 4.999.353,17 (47,98%)

Project manager: Welzijnszorg Kempen

Smart Tooling: smart maintenance robotics

In the process industry machinery is running nonstop. That is why maintenance is an important part of business, especially because of increasingly stringent regulations on safety and environment. 'Smart Tooling' puts a particular focus on automation: the development of prototypes of robots and maintenance tools can be safer, cheaper, cleaner and more efficient. Thus, the productivity of the industrial maintenance is enhanced. An example can be robots who clean and inspect locations that are dangerous or inaccessible for people.

In Europe robot technology is seen as a major opportunity for development in the field of maintenance. Because robotic technology is still embryonic, there are many uncertainties and possibilities that have not yet been explored. This project gives a boost to SMEs in the border-region to develop robotic innovations. Research will be done to inspection and cleaning robotics and drones. This latter type, 'the flying robot' is not yet widely used for inspections in the process industry. Due to this development the safety can be greatly improved by – for example – the inspection inside tanks.

Thanks to the active involvement of knowledge institutions such as the University of Twente, a leading institute in the field of robotics, a direct incentive for technological development of SMEs will be in order. Multinationals BASF and Dow Benelux act as test sites. The cross-border cooperation gives companies access to a wide range of expertise and infrastructure that otherwise is not or difficult to access.

Theme: 1B - INNOVATION - smart growth

Out of a total budget of € 3,563,839.45 Interreg make a contribution of € 1,720,010.75 (48.26%)

Project manager: Knowledge and Innovation Centre for Maintenance in the process industry (K <| MPI)

Sustainable monuments through Demi More

'Demi More' (Demonstration of Energy Efficiency by Measurement and Innovation gives MORE) - led by Kempens Landschap and the province of Noord-Brabant - focuses on energy efficiency in (historical) heritage.

The energy policy of monuments requires a very specific approach. In terms of energy consumption, monuments often have a poor performance because of the used materials, the size of the rooms and the absence and the difficult application of isolation in floors, walls and roofs. Through demonstration projects of various nature - such as the railway yard in Essen and the Franciscan monastery in Megen - innovative applications for energy efficiency and use of renewable energy in monuments can be made tangible and offer insight into the possibilities. In this way, the project hopes to persuade other stakeholders to invest. In combination with the elaboration of an international standard for the certification of sustainability of monuments (BREEAM standard, especially tailored for monuments), this can result in a powerful toolkit for the preservation of heritage. Thus the monument sector in the Netherlands and Flanders can make its contribution to the ambitions of Europe 2020, that strives to reduce CO₂ emissions, encourage the greening of energy and to make its consumption more efficient.

Theme: 2B - RENEWABLE ENERGY - sustainable growth

Out of a total budget of € 3,874,720.81 Interreg contributes € 1,937,360.40 (50%)

Project manager: Kempens Landschap

2B Connect combines businesses with biodiversity

'2B Connect' – with the Flemish Department of Environment, Nature and Energy as lead partner – gives substance to the Biodiversity Strategy 2020 of the European Commission: to develop green infrastructure as an important means of maintaining and improving ecosystems and their services. The European Commission emphasizes the importance of cooperation with and between companies to achieve the targets in terms of biodiversity. '2B Connect' provides at least 70 companies with a biodiverse layout of their premises. This green infrastructure plays an important role as a natural and green corridor and also provides less noise, better air purification and a pleasant setting for outdoor activities.

Many companies would like to organize and manage their grounds on a nature-oriented way. However, they lack the necessary knowledge and support. Through the biodiversity scan BIODIVA for companies - developed in 2012 by i.a. the province of Antwerp and the Strategic Project Organization Kempen - a number of companies were helped in increasing the knowledge about biodiversity. But this was often on an ad hoc basis. However, there is a growing demand for support from the companies. Besides this, the project is developing a calculation tool that demonstrates why it is worthwhile to invest in green infrastructure by demonstrating the benefits for the company.

Theme: 3A - ENVIRONMENT AND RESOURCES - sustainable growth

Out of a total budget of € 6,025,165.41 Interreg contributes € 3,012,582.69 (50%)

Project manager: Flemish Department of Environment, Nature and Energy

REVIVAK revitalizes craftsmanship

In recent years there has been a growing awareness and appreciation among consumers, creatives and entrepreneurs for refined craftsmanship and workmanship. Art and craft stands for authenticity, quality and durability.

But unfortunately technical professions are not very appealing to young people and jobseekers. The inflow of young people into technical or vocational schools is inadequate and through the years valuable expertise was lost. This threatens the traditional craftsmanship, at the very moment that consumers have a renewed interest in it.

'REVIVAK' responds and focuses on the preservation and promotion of employment in skill occupations, especially in the construction and restoration industry. As this sector is relatively unknown for job seekers, Interreg Flanders-Netherlands wants to revitalize through 'REVIVAK' the focus on craft and technique. Through internships, excursions, bootcamps and online courses quality personnel is provided in Flanders and the Netherlands, which can be successfully used, for example in the heritage sector.

Theme: 4A – LABOUR MOBILITY - inclusive growth

Out of a total budget of € 1.621.526,50 Interreg contributes € 810.763,25 (50,00%)

Project manager: Stichting Monumentenhuis Brabant

Hydrogen Region 2.0: Flanders and the Netherlands strengthen cooperation on hydrogen

Hydrogen is globally considered to be a major opportunity for achieving a carbon-free economy. It is highly promising, as it is a clean, emission-free fuel. Hydrogen applications within transport present many new prospects: a hydrogen vehicle is an electric vehicle, but instead of batteries, hydrogen is transformed into electricity. At a European level, however, an extra boost is needed to elevate the feasibility to a considerably higher level: technological breakthroughs are needed in order to compete with current, traditional fuel vehicles.

The previous Interreg-project 'Waterstofregio' (Hydrogen Region) (2009-2013) showed that, in the Flanders-Southern Netherlands region, collaboration between a number of unique technology players, such as Colruyt Group and Beukers Autoschade BV were able to realise highly innovative projects, such as a 1 Megawatt power plant, a new bus concept, a filling station in Flanders for forklift trucks, a filling station in the Netherlands for buses and cars, a refuse lorry and a sloop; all of which run on hydrogen. The project also devoted attention to training modules, through collaboration between higher educational establishments in the border region. This has led to a solid position in Europe as one of the top regions in the transition from traditional fuels to hydrogen.

'Waterstofregio 2.0, which receives a subsidy of almost 6 million euros through Interreg Flanders-Netherlands, focuses on improving and demonstrating various applications. With the consent of Waterstofregio 2.0, coordinated by WaterstofNet, the collaboration between Flanders and the Netherlands is being further reinforced: Colruyt Group and Beukers Autoschade BV are committing themselves again, together with new partners such as VDL and PitPoint. With the approval of Waterstofregio, again coordinated by WaterstofNet, this collaboration between Flanders and the Netherlands is being further reinforced as additional projects are realised by and for companies in the region. Various end-users, such as citizens, the private sector and governments, also have the opportunity to test applications and gain knowledge in a low-threshold, hands-on fashion.

Projects set up in the field of hydrogen infrastructure:

- Developing and building two unique hydrogen filling stations, where hydrogen will be produced on the spot from green electricity: In Wilrijk, the filling station is being linked to an incinerator and, in Breda, the filling station is linked to solar energy.
- Expansion of the existing hydrogen filling station on the Automotive Campus in Helmond to serve even more demonstration applications

Development and deployment of a mobile hydrogen filling station to facilitate demonstrations at various places in the region Zero emission applications:

- Demonstration of Europe's biggest fleet of 75 forklift trucks, which will use indoor hydrogen tanks
- Development and demonstration of the first big (forty tonne) hydrogen truck in Europe The demonstration programme for refuse lorries, started in the previous Interreg project, will be continued in this collaboration between Flanders and the Southern Netherlands
- To further expand the existing ecosystem comprising technology developers and end-users, we are collaborating with regional development companies and network organisations.

Theme: 2A – RENEWABLE ENERGY - sustainable growth

Out of a total budget of € 14.051.027,01 Interreg contributes € 5.975.746,30 (42,53%)

Project manager: WaterstofNet vzw

eco2eco

Eco2eco aims to stimulate the wood market through the market-oriented collaboration of forest owners and their organisations, the business world, knowledge institutions and the government. The initiators want to use innovation to increase efficiency in wood production and marketing.

In the various partners' woodlands, which cover some 270,000 hectares, innovative management methods and techniques aimed at sustainable wood production and exploitation will be developed on 3,000 hectares. The German-developed qualification and dimensioning (QD) forest management method, for example, is being introduced into the border region, which is investigating how fir trees react to pruning or exemption and whether a viable alternative can be offered for the chemical treatment of exotics. The acquired knowledge is distributed so that it can also be successfully applied by other forest owners and managers in the rest of Flanders and the Netherlands.

Eco2eco is short for Economy to Ecology – Ecology to Economy: economy and ecology hand-in-hand within forestry as well. Forests provide various ecosystem services and the production of wood as a renewable commodity is an important aspect. The project fits in with the Europa 2020 strategy, which promotes the efficient use of resources.

Theme: 3B - ENVIRONMENT AND RESOURCES - Sustainable growth
Out of a total budget of € 5.000.000 Interreg contributes € 2.500.000 (50%)
Project manager: Inverde

EnergyEfficiency (EnEf)

EnEf is aimed at tackling energy reduction and limiting CO2 emissions, a goal that is evolving into two facets. The first focuses on reducing energy consumption in glass applications in a solar, greenhouse and built up environment, for example. Developing a multifunctional glass coating using nanotechnology will contribute to the efficient use of solar energy. This research is being conducted by SMOs, such as Kriya Materials, and knowledge institutions such as TNO (Netherlands Organisation for Applied Scientific Research) and the universities of Hasselt and Ghent. The Zuyd and Fontys universities complete the cross-border collaboration by offering customised courses. The economic feasibility of the prototypes is being examined in various test cases.

Secondly, EnEf focuses on a cost and energy savings method for developing pharmaceutical peptides. Within this sector, peptides are crucial for developing new medicines for cardiovascular and metabolic diseases, for example. There are long and short forms of peptide. Short peptides are produced on a large-scale using classical methods. At the moment, the current production technique for the long – and most efficient – version is a difficult, time-consuming, inefficient and energy-wasting process. New production technology has already been developed by, among others, Syncom and Enzyep. The initial scientific and technical results show that savings of up to 70% of energy consumption can be achieved in the production process. Within EnEf, together with the University of Ghent, the two aforementioned companies are researching a cost and energy-efficient method. Here, too, the Zuyd and Fontys universities provide an educational programme.

Thema: 2C – RENEWABLE ENERGY - sustainable growth
Out of a total budget of € 3.376.472,35 Interreg contributes € 1.688.236,18 (50%)
Project manager: NanoHouse

Leve(n) de Bodem: restoring farmland

In recent decades, agricultural production per hectare has increased enormously. There is another side to that big success, though. Intensive use of agricultural ground has resulted in deteriorated soil quality. This decline has been caused by the use of heavy machinery, artificial fertilisers and pesticides, for example. Consequently, the soil has lost its buffering function.

Leve(n) de Bodem aims to encourage some 200 farmers to engage in recovery and improvement. Halting the negative spiral requires a transition in the way farmers think and act. Thanks to close cooperation between parties such as Proefcentra Inagro, PCG, de Rusthoeve and de Hooibeekhoeve, as knowledge and expertise centres for agriculture and horticulture, innovative techniques and knowledge are being applied. To optimise soil health, for instance, localised experiments are being conducted, adding lime to ensure an optimal soil pH and decontaminating the soil with green manure (biofumigation). Participating farmers implement the measures and a soil scan is made to monitor their effectiveness. This scan gives a picture of the soil quality so a coherent link can be established between soil chemistry, soil biology and soil physics.

Theme: 3C - ENVIRONMENT AND RESOURCES - Sustainable growth

Out of a total budget of € 2,092,300.54 Interreg contributes € 1,046,150.27 (50%)

Project manager: Inagro

i-4-1-Health: Flanders and the Netherlands are battling with antibiotic resistance

In 2014, the World Health Organisation declared antibiotic resistance to be one of the greatest threats to human health. Without supplementary measures, it is predicted that, by 2050, more people will die due to antibiotic-resistant pathogens than from cancer. Despite increasing resistance, however, no new antibiotics are expected to be marketed in the short term.

i-4-1-Health, organised by the Amphia Hospital, with its main location in Breda, aims to reveal resistance amongst healthy citizens and patients and in the pork and poultry sectors. Professor Jan Kluytmans, who is heading the project, explains: "Cross-border collaboration is crucial, as the spreading of antibiotic-resistant pathogens does not stop at national borders. This is specifically relevant in the Flanders-Netherlands border area, in view of the close trade and movement of persons, the cross-border use of healthcare facilities and the intensive cattle farming in the region. Collaboration between various disciplines, such as biological and biotech sciences, medicine (human and veterinary), nano and micro technology and agrofood is important."

In addition to reinforcing the network on both national borders, two concrete tools have been created. On the one hand and thanks to the development of the digital measuring tool Infection Risk Scan (IRIS), infection risks can be analysed objectively and uniformly. IRIS measures processes such as cleaning, hand hygiene among healthcare providers and the correct use of medical resources and antibiotics. On the other hand, insight is required into who gets sick where, when and why, and into how the underlying pathogens are spread. With a number of partners, the software company Applied Maths will be developing and validating a track and trace system (TTS) in testing grounds for healthcare, public health and cattle farming. A complete A-Z procedure – from sampling to interpretation of the data gathered – is being set up to promptly trace and tackle the transmission routes of antibiotic-resistant pathogens.

Theme: 1A INNOVATION - smart growth

Out of a total budget of € 8.483.688,70 Interreg contributes € 3.609.013,89 (42.54%).

Project manager: Amphia Ziekenhuis

Borderless Bio-based Education

In the Koepelvisie Delta Region 2030, bio-based economy has been selected as one of the three top clusters and as a driving force for innovation and specialisation in the Dutch-Flemish Delta Region. With the presence of a large agronomic and chemical sector, a favourable geographical position and collaboration between companies, knowledge and educational institutions and governments, this border region can assume a unique pioneering role. Opportunities for economic growth, job retention and expansion are under pressure, though, due to a shortage of technically qualified people. Both the competencies of the current workforce in the industry and educational programmes for tomorrow's professionals are still insufficient.

Grenzeloos Biobased Onderwijs (Borderless Bio-based Education) wants education to be geared more closely to future developments and specific demands from the business community. To stimulate innovation in the bio-based economy, collaboration between sectors and educational disciplines is therefore essential. The Strategische Projectorganisatie Kempen (Kempen Strategic Project Organisation) (SPK), for example, will be analysing the necessary skills and competencies for the kind of current and future employees companies are looking for. This will help adjust and fill in the gaps in certain learning modules. Avans University of Applied Sciences is creating a knowledge network and digital platform for educational institutions, students and companies. In addition, there will be a pool of lecturers for bio-based courses, with actual lecturer exchanges. ROC West-Brabant will be responsible for the inventory of all training and practice facilities in the border region. A plan of action will then be compiled that is aimed at improving existing facilities for algae growing, insects and sugar and bio refining. A shared facility structure is being set up in which both students and professionals can make use of each other's facilities.

Theme: 4A – LABOUR MOBILITY - inclusive growth

Out of a total budget of € 2.949.974,41 Interreg contributes € 1.474.987,20 (50,00%)

Project manager: Gemeente Dordrecht