

CORDIS Results Pack on innovative SMEs in Europe and beyond

Support for small businesses helps the EU economy grow

A thematic collection of innovative EU-funded research results

March 2026

The projects featured in this Results Pack are funded under the European Partnership on Innovative SMEs, a co-funded partnership under Horizon Europe.



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Editorial

Small businesses are the engine of the European economy, driving innovation and generating growth for the benefit of all EU citizens. This CORDIS Results Pack showcases nine projects supported by the European Partnership on Innovative SMEs, co-funded by the EU through Horizon Europe, the Eureka Network and innovation funders in the participating countries. The overall aim of the partnership is to support innovative SMEs in developing new and original products, processes and services, helping to make Europe more competitive in the global market.

Europe's economy is based on small and medium-sized enterprises (SMEs), which comprise [99 % of all businesses](#) and employ over 88 million people. [Eurostars-3](#), the flagship programme of the [European Partnership on Innovative SMEs](#), supports companies to engage in international collaborative projects by fostering links between SMEs, research organisations and other partners.

Since 2008, the three editions of Eurostars, co-funded by the different EU framework programmes for research and innovation, the Eureka Network and a steadily increasing number of national funders, have witnessed a rise in public money committed and the number of projects funded, as well as an increase in private funding leveraged and its expansion towards non-European countries.

The European Partnership on Innovative SMEs manages to strengthen innovation ecosystems, accelerate the scale-up of SME-driven technologies and enhance access to international markets. It also plays a vital role in bridging the gap between research and market deployment, enabling innovative SMEs to contribute significantly to the EU's green and digital transitions.

Nurturing innovation

Over 1 600 SMEs have taken part in projects funded under Eurostars-3, the flagship programme of the European Partnership on Innovative SMEs since its start in 2021, demonstrating how European start-ups and spin-outs are pushing the boundaries of technology through international collaboration. These SMEs have developed innovative solutions that accelerate the shift to sustainable energy and transport, advance efforts to combat cancer and future pandemics and reduce waste while improving food sustainability.

Eurostars-3 empowers companies by connecting them with international innovators, fostering cooperation that goes beyond EU borders. The programme not only promotes cutting-edge research and development but also strengthens the global competitiveness of EU businesses, enabling them to access new markets and scale their innovations worldwide.

Internationally competitive

This CORDIS Results Pack features nine projects that highlight the impact innovative SMEs can have on European societies through the technologies they develop, the economic growth they generate and the social impact they bring.

Seen as the mainstay of European growth and competitiveness, research-intensive SMEs require substantial support to grow beyond national borders. As the EU has put innovation and competitiveness at the heart of its strategy, the goal of this Results Pack is to highlight through real-life examples the gaps that remain and the importance of programmes such as Eurostars-3 in bridging those gaps.

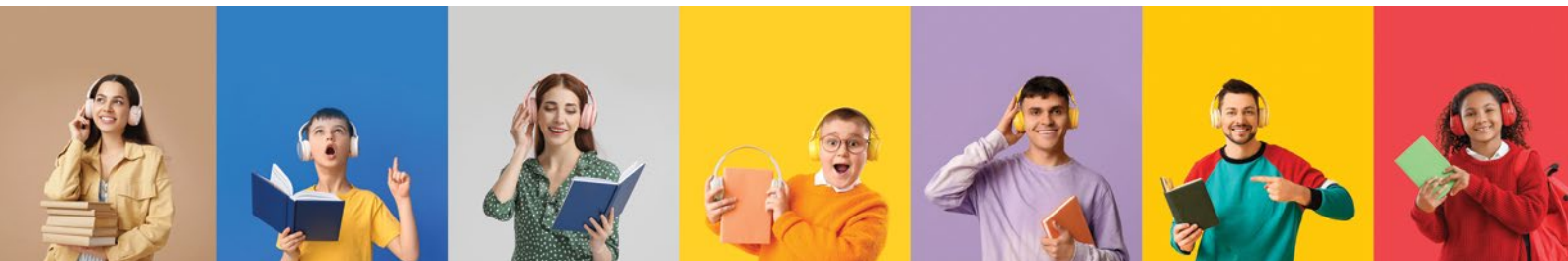
Growth beyond Europe

The Eurostars-3 programme helps SMEs build innovation networks beyond their home country, co-develop technologies with partners across Europe and globally, and explore new markets and value chains. Implemented through national and regional public authorities that are close to the level of the organisations it supports, the programme is often an accessible first step into international cooperation for SMEs.

Its bottom-up nature enables innovators to access funding to develop transformative technologies across any sector, fostering new market creation and driving growth at the level of individual companies. At societal level, solutions delivered through the programme's open calls have impacted EU-level challenges such as the twin transition, with 52 % of all projects contributing to digital innovation and 37 % to the [European Green Deal](#).

Giving every language a voice: AI-powered audiobooks for everyone

AI technology is helping small publishers and underserved languages finally find a voice in the audiobook market.



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“Low-resource languages – those with limited digital data and few tools to help computers pronounce text – would often be overlooked in the audiobook market,” explains Aistis Raudys, CEO of [AAI Labs](#), a Lithuanian AI company specialising in machine-learning and generative AI solutions.

In 2022, a consortium led by AAI Labs received EU, [LMT](#), [HAMAG-BICRO](#) and [DSTI](#) funding to develop Audiobooks for Everyone (AFE), an AI-powered platform that makes it faster and more affordable to create audiobooks in languages that are often overlooked. The support came through [Eurostars](#), part of the [European Partnership on Innovative SMEs](#), which helps innovative small companies work with international partners to bring new technologies to market.

Thanks to this funding and active cross-border collaboration, AAI Labs and its partners combined AI expertise with publishing know-how from Europe and Africa, creating a solution that opens the audiobook market to more languages, readers and publishers.

Breaking down barriers

Without the right technology, audiobook production remains too expensive, especially for small publishers and authors, creating a cycle where these languages remain underserved. AFE uses cutting-edge AI to change the game.

“AFE’s core innovation, cross-language voice cloning, functions as a voice translator, allowing the software to use one voice sample to narrate text in languages the speaker does not actually speak,” says Raudys. A single narrator can ‘voice’ a story in multiple languages, enabling immersive, multi-character audiobooks without hiring a full cast.

The project brought together teams from Lithuania, Croatia and South Africa. AAI Labs led the technical development, building the speech synthesis systems and models. [Bulaja Naklada](#) handled European data collection and testing, while [Quickfox Publishing](#) provided African language datasets and developed the user-friendly Audiobook Creation Suite.

“This team was essential, combining technical skills with market understanding to ensure the product was successful, inclusive and ready for markets in Africa and Europe,” explains Raudys.

Widening cultural horizons

Participation in the European Partnership on Innovative SMEs was key. "The partnership immediately expanded market access for Lithuania by providing new business opportunities and contacts in Croatia and South Africa," notes Raudys. Beyond funding, it facilitated an exchange of expertise: AAI Labs shared AI know-how, while publishing partners contributed practical insights that helped shape market-ready solutions.

AFE has already achieved remarkable results. "The project's greatest achievement is the successful inclusion of several low-resource languages, such as Zulu, Xhosa, Afrikaans, Croatian and Lithuanian," Raudys says. Previously, these languages were almost entirely absent from the audiobook market. The technology creates new business opportunities for publishers and gives listeners access to a broader range of literature in formats and languages they can enjoy.

As well as low-resource languages, AFE covered languages with significant resources, such as Russian, French and Spanish; at the other end of the scale, it also focused on certain dialects.

By combining AI and creativity, AFE is bringing new voices to underserved languages and shaping a more inclusive digital and cultural landscape. "AFE shall contribute towards a level playing field among diverse European languages," says Raudys. The project demonstrates how technology can empower creativity, preserve linguistic diversity and expand access to literature for everyone.

Following the project's completion, AAI Labs aims to further refine and scale the AFE platform, expand support to additional low-resource languages and dialects, and bring the technology to market through partnerships with publishers and content platforms. With growing global demand for audiobooks and accessible digital content, the solution has strong commercial potential to open new markets while supporting linguistic diversity worldwide.

The consortium brought together AAI Labs, Bulaja Naklada and Quickfox Publishing, and was co-funded by Horizon Europe, the Research Council of Lithuania (LMT), the Croatian Agency for SMEs and Investments (HAMAG-BICRO), as well as by South Africa's Department for Science, Technology and Innovation (DSTI).

New voices for greater diversity

Developing the system was not without its difficulties. "The main technical challenge was bringing advanced AI systems to languages with little digital data," Raudys explains. The team overcame this by using stressed text, hiring native speakers for feedback and applying linguistic research. "AFE addressed the artistic demand for natural, expressive narration by directly training the AI models with purposely expressive speech data," he adds.



This AI-based method cuts production costs by nearly 60 % and reduces production time to as little as one hour.

Looking ahead, AFE promises to transform audiobook accessibility and inclusivity. "This AI-based method cuts production costs by nearly 60 % and reduces production time to as little as one hour, eliminating costly expenses like narration and recording," Raudys notes. It also benefits visually impaired listeners, supports small publishers and helps innovative SMEs across Europe.

PROJECT NAME

AFE - Audiobooks for Everyone

PROJECT DATES

1 March 2023–1 March 2025

COORDINATED BY

Taikomasis dirbtinis intelektas, UAB in Lithuania

FUNDED UNDER

Eurostars-3, European Partnership on Innovative SMEs

PROJECT WEBSITE

aai-labs.com



New thermal ‘battery’ offers smarter way to store solar heat

A new EU-funded technology is reinventing how homes can store solar heat, making clean, affordable heating a reality even in the depths of winter.

A European research project called EuteQ is exploring new ways to help households store and use solar heat more efficiently, by developing compact, high-density ‘thermal batteries’ that make renewable heating more flexible and practical.

Supported by the EU through [Horizon Europe](#), [Innosuisse](#) and [DLR](#), the project managed to accelerate SME-led clean-energy technologies.

“EuteQ tackles one of the key challenges for renewable heating in Europe: storing solar heat efficiently and at high density so that households can use photovoltaic (PV) electricity (or other intermittent renewable electricity sources) to cover more of their own heating demands,” explains Philipp Roos, head of systems engineering at Cowa Thermal Solutions, a Swiss cleantech company based in Lucerne, Switzerland.



EuteQ tackles one of the key challenges for renewable heating in Europe: storing solar heat efficiently and at high density so that households can use PV electricity to cover more of their own heating demands.

In practice, these compact cells replace standard water tanks, creating a highly compact storage system where water is heated on demand, flowing through a heat exchanger embedded in the PCM. Water carries the heat, while the PCM adds high-capacity storage at tightly controlled temperatures: 48°C and 58°C are currently available for domestic hot water and room heating.

At the pilot site in Northern Germany, one residential building is equipped with PCM-enhanced tanks, while a neighbouring building uses standard storage. The result? A real-world comparison showing how much more efficient and flexible renewable heating can be. “Together, these components form a hybrid sensible–latent storage concept operating across both room-heating and DHW temperature zones,” says Roos.

High-density storage using special salts

Conventional water tanks store heat simply by warming water. They are bulky and inflexible. EuteQ’s solution uses [phase-change materials \(PCMs\)](#) – special salts that absorb and release heat as they melt and solidify.

These PCMs can store up to three times more energy than a traditional tank of the same size. “The newly developed Cowa COMPACT Cell increases the system performance even further, with optimised heat transfer for maximum power density suitable for domestic hot water (DHW) storage,” Roos notes.

Boosting flexible solar energy consumption

A standout feature is the system’s synergy with rooftop solar panels. When the sun shines, PV-driven heat pumps charge the PCM tanks, storing energy for later use and reducing reliance on the electricity grid. Early simulations show that this approach boosts solar energy consumption and makes heating more predictable, even when sunlight is scarce.

EuteQ’s achievements highlight the value of European collaboration. The project brings together partners from Switzerland and Germany, including Cowa Thermal Solutions,



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ZAE Bayern, HSLU and Varmeco. “The partnership benefits strongly from cross-border industrial–research cooperation, coordinated work packages and shared data infrastructure, enabling fast iteration between modelling, materials, product design and validation,” Roos explains.

The potential impact is significant. Widespread adoption could shrink tank sizes, improve seasonal energy flexibility, lower costs and help European households rely more on renewable electricity. “Strong industry–research coordination accelerates technology maturation,” Roos adds, noting that discussions are already underway to bring PCM-enhanced storage systems to market.

Thanks to EuteQ, the vision of compact, efficient and solar-powered home heating is no longer a distant idea. It is a practical, scalable technology that could make renewable heating the norm, not the exception. Building on the project’s results, the next steps for EuteQ focus on further system optimisation, large-scale demonstration and market rollout through industrial partners. With strong potential for integration into existing domestic heating systems, PCM-enhanced thermal storage could become a commercially attractive solution for households across Europe seeking compact, flexible and renewable heating.

The consortium brought together Cowa Thermal Solutions, the Lucerne University of Applied Science and Arts, the Bavarian Center for Applied Energy Research and Varmeco, co-funded by Horizon Europe, the Swiss Innovation Agency (Innosuisse) and the German Aerospace Center (DLR).

PROJECT NAME

EuteQ - Compact latent storage based on eutectic salt hydrate for photovoltaic driven heat pump systems

PROJECT DATES

1 October 2022–1 April 2025

COORDINATED BY

Cowa Thermal Solutions in Switzerland

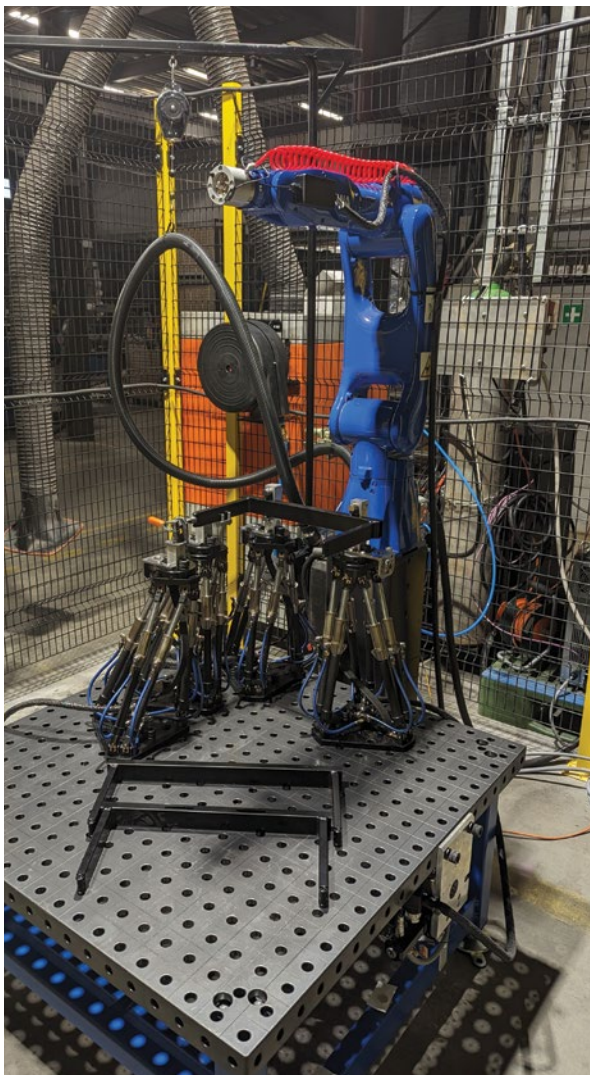
FUNDED UNDER

Eurostars-3, European Partnership on Innovative SMEs



Robotic welding cell makes small-batch work faster

A flexible welding cell helps manufacturers to simplify production processes, cut down on storage and reduce reprogramming work.



© Laurent Marquis

Conventional robotic welding systems are built for repeating the same job at scale and often struggle when designs change. Each new order for a different welded part requires engineers to manually rebuild and recalibrate jigs, which are fixtures that hold metal parts during welding, resulting in prolonged machine downtime and increased costs.

Supported by the EU through [Horizon Europe](#), [IFD](#) and [LMT](#), the [FIT4Weld](#) project tackled this problem by creating a robotised welding cell built for flexibility rather than scale. Combining an intuitive software platform, a commercial robot and self-adjustable jigs mounted on hexapods (six-legged mechanical platforms), the system allows manufacturers to reconfigure production much faster than before.

How self-adjusting jigs save time on the factory floor

In traditional set-ups, every order means physically swapping jigs and realigning them to the robot. That process adds hours of downtime and forces workers to handle heavy fixtures. FIT4Weld's innovation is that the jigs reconfigure themselves instead. Operators simply select the next preprogrammed set-up, and the robot moves the hexapods into position before resuming welding.

As project coordinator, Laurent Marquis, explains: "The idea is not to change the jig between orders as it is traditionally done, but to have the jig to be self-adjusted. When we say self-adjusted, we mean that we use the robot to reposition the jig." Once positioned, the robot picks up the welding gun and continues the process on the new parts without interruption.

This approach eliminates the need to store dozens of physical jigs, reducing maintenance associated with transporting or readjusting them. The result is smoother operations and far less idle time between production runs.

A unified control interface makes automation accessible

One of FIT4Weld's goals was to simplify programming so non-specialists could operate the system. Traditional robotic welding requires two separate programmes: one for the robot's movements and another for the welding parameters. FIT4Weld keeps the two programmes in the background but allows operators to start both from one interface, while also adjusting the fixture for the next set-up without entering the robot programme.

As Marquis notes: "The main idea is to gather the two programmes in one interface for the operator; the integration of the two is handled in the background, and each programme can be started at the same time." Operators can prepare the next configuration in advance while the robot completes its current task, removing the need for specialist coding skills. This makes the system more accessible to smaller companies without in-house automation engineers.



The main idea is to gather the two programmes (the one that runs the robot's movement and the one that runs the welding process) in one interface for the operator; the integration of the two is handled in the background, and each programme can be started at the same time.

Tested, validated and ready for adoption

The FIT4Weld cell was installed and tested at an industrial furniture manufacturer, where it proved reliable across parts of different sizes. Operators appreciated the shorter set-up times and reduced physical handling. As Marquis reports: "The operators are happy with the process as they are now switching easily between parts without having the issue of changing the jig mechanically."

Alongside the installation at the industrial furniture manufacturer, the team also demonstrated the system to several companies in the metal industry, with one of them already adopting the technology. The partners now plan to expand its use to other processes such as laser cutting, spot welding and assembly, showing how flexible automation can reshape manufacturing beyond welding, and building on the market interest already shown by metal manufacturers needing faster changeover.

The consortium brought together Flex Hex ApS, the University of Southern Denmark (SDU) and LT Technologies UAB, co-funded by the EU through Horizon Europe, the Danish Innovation Fund (IFD) and the Research Council of Lithuania (LMT).

PROJECT NAME

FIT4Weld - Flexible and InTuitive robotic hexapod cell system for the Welding process

PROJECT DATES

1 March 2023–1 March 2025

COORDINATED BY

Flex Hex ApS in Denmark

FUNDED UNDER

Eurostars-3, European Partnership on Innovative SMEs

PROJECT WEBSITE

largestructureproduction.sdu.dk/projects/fit4weld/



The future of gearbox monitoring in wind turbines is light-based

Optical technology can now track the slightest changes in torque, load or temperature of wind turbines in real time – issues that traditional electrical or mechanical sensors often miss until they cause costly disruptions.

Wind turbine gearboxes are vital components connecting the slow-moving blades of a wind turbine to the high-speed generator, thereby enabling efficient electricity production. By increasing the rotational speed of the blades, the gearbox ensures that the generator operates at optimal levels.

Yet, diverse factors including fluctuating turbine loads and environmental stress can cause unexpected gearbox inefficiencies or failures. Monitoring these gearboxes is essential to improve reliability, reduce downtime and optimise energy production.

In an effort to address these challenges, the [GearUp](#) project is developing a photonics-based system for monitoring gearbox load and torque. Created through a joint venture between [Sensing360](#) and [Sentea](#), and funded by the EU through [Horizon Europe](#), [RVO](#) and [VLAIO](#), this innovative solution supports the entire wind turbine lifecycle, from design validation to wind farm operation. “By providing real-time insights into gearbox performance, our system tackles key industry issues such as poor visibility into actual loads, unexpected failures and suboptimal farm operations,” notes project coordinator Eric van Genuchten.

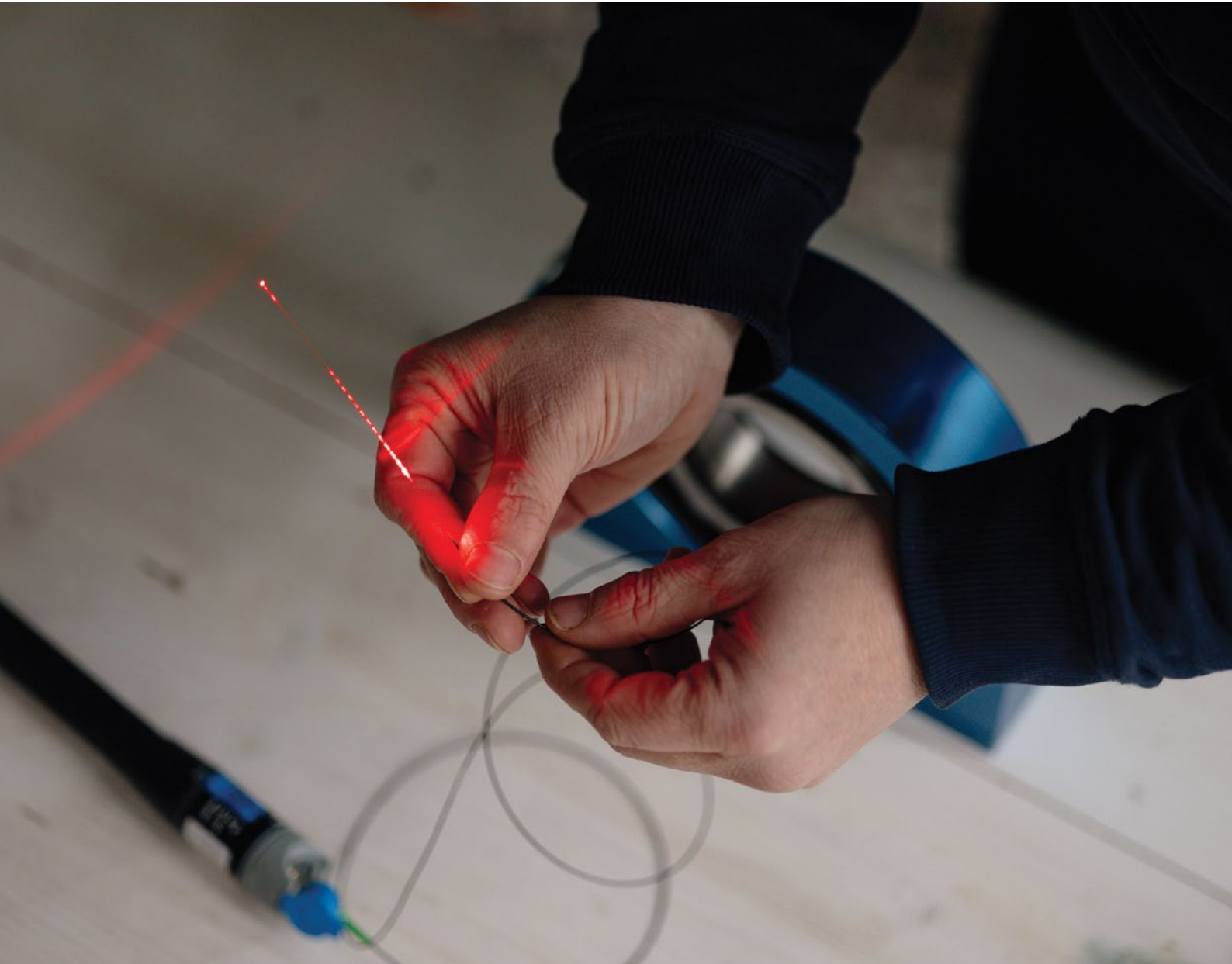


By providing real-time insights into gearbox performance, our system tackles key industry issues such as poor visibility into actual loads, unexpected failures and suboptimal farm operations.

‘Illuminating’ gearbox health in real time

The GearUp system consists of an integrated photonic chip with an embedded control unit (interrogator) that processes the data (such as load, torque) collected by the chip. This set-up enables the system to take extremely precise and fast measurements. Specifically, it can measure changes in the gearbox at a rate of 20 kHz for each fibre sensor it uses. The accuracy of these measurements is incredibly high, down to 1 picometre, ensuring that even the tiniest changes in the gearbox’s load or torque can be detected in real time.

The system works by using a special type of sensor: a fibre Bragg grating. “These tiny optical sensors embedded in the fibre are directly taped around the gearbox to measure strain and temperature,” says van Genuchten. “When the gearbox experiences changes in load or stress, the light travelling through the fibre changes slightly. The photonic interrogator detects these shifts in the light at high sampling rates and translates them into useful data, such as how much torque or load the gearbox is under, how well the load is being shared, and even the gearbox’s speed and operating temperature,” he explains.



© Nicoline Rodenburg – TKI Offshore Energy

“The result is a simple, all-in-one sensor system that is easy to install and capable of turning real-world physical operations into actionable digital data. Given that signals are optical, the system is immune to electromagnetic interference and lightning – a big advantage for wind turbines operating in challenging environments,” adds van Genuchten.

Lower repair costs, higher energy output

This technology brings significant benefits to the wind energy sector. “By monitoring torque, load and planetary

load-sharing indicators, the system can identify potential problems before they escalate. For example, it can reduce the cost of a major EUR 500 000 gearbox repair by enabling a smaller fix for EUR 250 000,” states van Genuchten.

The system also provides accurate, real-time data on true loads, enabling better in-turbine control and load balancing across the wind farm. These can extend the lifetime of turbines by 10-20 % and increase energy output at the farm level by up to 7 %.

As the first industrial application of photonics for wind turbine gearboxes, GearUp enables optimised gearbox design, validation, commissioning, maintenance management and

wind farm operation. Designed to be cost-efficient, the system meets a target selling price of EUR 5 000, making it accessible for widespread adoption.

Following the project completion, the next steps include obtaining CE and PLC certifications over the next few months. Beyond wind energy, the GearUp system has significant market potential in industries such as oil and gas, marine, automotive and heavy machinery, where similar planetary gearboxes and bearings are used.

The consortium brought together Sensing 360 and Sentea, co-funded by Horizon Europe, the Dutch Enterprise Agency (RVO) and Flanders Innovation and Entrepreneurship (VLAIO).

PROJECT NAME

GearUp - Photonic gearbox monitoring solution for wind turbine validation and wind farm optimization

PROJECT DATES

1 March 2023–1 March 2025

COORDINATED BY

SENSING360 in the Netherlands

FUNDED UNDER

Eurostars-3, European Partnership on Innovative SMEs

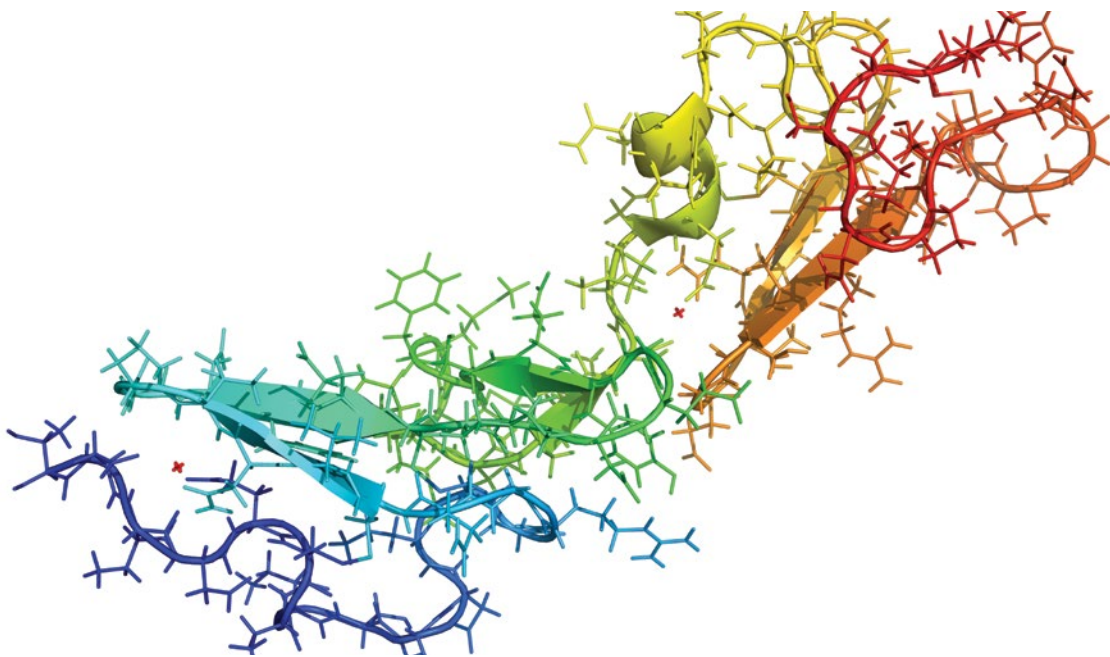
PROJECT WEBSITE

sensing360.com/products/gearup/



Decoding sugar molecules on proteins to transform personalised medicine

Glycans shape how immune proteins function and influence disease. GLYSEC reveals these patterns to advance diagnostics and accelerate personalised drug development.



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The success of modern therapies increasingly depends on understanding how patient-specific biology shapes drug responses. The attachment of sugar molecules to proteins, a process known as [glycosylation](#), can profoundly influence immune function. However, this layer of biology has been largely overlooked in drug development, where emphasis has traditionally been placed on protein sequence and target affinity. Glycan structures are highly complex, dynamic and difficult to characterise systematically. Therefore, they are rarely incorporated into standard drug design and manufacturing. Unwanted immune reactions driven by glycan patterns can reduce therapy efficacy or trigger adverse effects, highlighting the need for predictive strategies.

A collaboration-driven platform for glycosylation analysis

Funded by the EU through [Horizon Europe](#), [Innovate UK](#) and [RVO](#), the GLYSEC project created an integrated analytical platform for glyco-immunology that helps researchers uncover how sugar molecules on proteins, known as glycans, shape immune responses and disease progression. GLYSEC is the result of a partnership between three European companies: [Immundnz](#) in the UK, [GlycoMScan](#) and [TenWise](#) in the Netherlands. The collaboration merges the immunology expertise of

Immundnz with cutting-edge LC-MS glycoproteomics of GlycoMScan's and TenWise's AI-powered literature mining.

"We offer everything from immune cell experiments to advanced glycopeptide analysis and predictive bioinformatics. This integrated approach means researchers do not have to piece together separate services; we deliver a complete workflow," explains project coordinator Robert-Jan Lamers, co-founder and company director of Immundnz Ltd.

GLYSEC places glycan biology at the centre of drug discovery, generating data that can be directly interpreted to identify new drug targets and biomarkers. The service does not just produce data but converts it into actionable insights that guide therapy development.

Technologies behind GLYSEC

The GLYSEC glyco-immunology workflow begins with the selection of immune cells of interest, such as dendritic cells, macrophages, NK cells, T cells or B cells and the preferred cell type. Once the experimental designs are tailored in collaboration with the client such as research institutes or hospitals, co-cultures are established and drug candidates are tested using flow cytometry and multiplex immunoassays. Samples are then prepared for [liquid chromatography and high-resolution mass spectrometry](#) analysis to generate detailed mass spectra for the precise characterisation of glycosylated proteins.

GLYSEC integrates experimental data with predictive bioinformatics using information from proteomic and glycan databases. The service associates the generated site-specific glycosylation profiles with signalling pathways, metabolites and diseases. Collectively, the results are compiled in a report, providing precise answers to the client's original biological questions and guiding therapeutic or diagnostic strategies.

Impactful discoveries

The GLYSEC approach has been applied across multiple disease areas, including cancer, inflammatory and autoimmune diseases, supporting both therapeutic and diagnostic innovation. The project has already contributed to notable breakthroughs, such as the ones mentioned below.

In cancer immunotherapy, the platform revealed that sugar patterns on immune cells determine whether they attack tumours or support their growth. By modifying glycosylation steps, researchers were able to push immune cells into a cancer-fighting mode.



This integrated approach means researchers do not have to piece together separate services; we deliver a complete workflow.

Similarly, in autoimmune disease research, GLYSEC identified glycan changes that trigger unwanted immune activation, providing targets for early-stage drug development. These findings demonstrate the power of integrating glyco-immunology into therapeutic design and open new avenues for patient-specific interventions.

Smarter drug design

Screening the glycan profiles of patients before treatment can predict immune responses, reduce adverse effects and improve efficacy, bringing precision medicine closer to reality. The platform also accelerates drug discovery by prioritising targets with high translational potential and may foster entirely new therapeutic classes focused on glycan modulation.

According to Lamers: "GLYSEC represents a fundamental shift in how we develop therapies." Moving forward, the project team aims to establish partnerships with pharmaceutical companies to embed glycosylation insights into drug pipelines.

The consortium brought together Immundnz, GlycoMScan and TenWise, co-funded by the EU through Horizon Europe, the UK's Innovation Agency (Innovate UK) and the Dutch Enterprise Agency (RVO).

PROJECT NAME

GLYSEC - Building the Glyco-Immunology Service Center for novel drug target discovery and drug optimisation

PROJECT DATES

1 November 2022–1 March 2025

COORDINATED BY

Immundnz Ltd. in the United Kingdom

FUNDED UNDER

Eurostars-3, European Partnership on Innovative SMEs



A data-driven tool for aquaculture hatchery decision-making

From trial data to smarter feeding strategies: meet HATCHTOOLS, the platform that brings structure, automation and efficiency to aquaculture hatchery studies.

Research and development in aquaculture, especially in hatchery operations and larval nutrition, must handle large volumes of complex data. Feed formulations, water parameters, growth rates and other key performance indicators are often managed manually with spreadsheets or handwritten logs, making data management a long and difficult process.

With funding from [Horizon Europe](#), [ANI](#) and [Innovate UK \(UKRI\)](#) deployed under the [European Partnership on Innovative SMEs](#), a consortium of three aquaculture enterprises – SPAROS, FLATLANTIC and Otter Ferry Seafish – designed a solution to this challenge through the [HATCHTOOLS](#) project.

“HATCHTOOLS was born from the need to bring structure, automation and intelligence to hatchery research and operations, aiming to help teams manage, analyse and learn from their data in a more efficient and reliable way,” explains Filipe Soares, HATCHTOOLS project coordinator.

The project developed a web-based data management and analytics platform to help generate insights specifically from larval nutrition and hatchery studies. This makes the tool different from most feeding and management systems, which usually focus on daily operations and production control.



HATCHTOOLS was born from the need to bring structure, automation and intelligence to hatchery research and operations, aiming to help teams manage, analyse and learn from their data in a more efficient and reliable way.

Drawing on data from several sources such as feeding logs, water quality records and zootechnical measurements, the platform uses automated statistical algorithms to analyse the information and generate reports instantly. “It enables users to focus on interpreting results rather than spending their often limited time processing data and compiling outputs,” says Soares.

HATCHTOOLS offers an intuitive interface that hides complex statistical algorithms. At the same time, it securely stores data and facilitates collaboration among team members.

Validating the tool in commercial hatcheries

The Portuguese company [SPAROS](#) focused on science and technology for the aquaculture market, spearheading the project in partnership with two fish producers: [FLATLANTIC](#) and [Otter Ferry Seafish](#). While SPAROS developed the software, both fish producers contributed with hatchery data, provided testing environments and validated the tool in real production conditions.

Tests were conducted with the fish species: turbot, Senegalese sole and [Atlantic halibut](#). “The trials ended up showing very promising results in new feed formulations specifically tailored for Atlantic halibut larvae, leading to higher growth rates and improved feed conversion,” states Soares.



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These results showed that the platform can streamline data management and trial workflows, supporting the development of more effective feeding strategies for sustainable aquaculture. Soares explains that ensuring robust, healthy fish larvae from the very first stages is important for reducing losses, optimising resource use and producing more resilient stocks throughout the entire farming cycle.

From early adoption to advanced analytics

Early users of HATCHTOOLS report that it helps simplify data organisation and reporting, reducing the time needed to complete these tasks. They highlight two key features: the ability to automatically generate trial reports and the tool's statistical algorithms, which support consistent results across trials, even when multiple people or different organisations are involved.

In the coming years, HATCHTOOLS is expected to evolve into a more comprehensive decision-support system for hatcheries and aquaculture researchers. Future developments will be guided by user needs and the potential applications of the data they collect. Planned features include advanced data visualisation dashboards and machine learning models to perform more sophisticated analyses, particularly for molecular-level data such as gene expression.

The consortium brought together SPAROS, FLATLANTIC and Otter Ferry Seafish, co-funded by the EU through Horizon Europe, the Portuguese Innovation Agency (ANI) and the UK's Innovation Agency (Innovate UK).

PROJECT NAME

HATCHTOOLS - Feeding optimization tools for precision hatchery management

PROJECT DATES

1 November 2022–1 April 2025

COORDINATED BY

SPAROS Lda in Portugal

FUNDED UNDER

Eurostars-3, European Partnership on Innovative SMEs

PROJECT WEBSITE

sparos.pt/projects/hatchtools/



Dual-LiDAR technologies optimise offshore wind park development and reduce risks

A novel solution using modular LiDAR systems improves the accuracy of offshore wind measurement tools. These technologies reduce the investment risks and improve the operational performance of offshore wind farms.

The world is in urgent need of affordable green energy solutions. Throughout Europe, research institutions and SMEs are pooling their resources and ingenuity to deliver viable alternatives to fossil fuels. With funding from the EU through [Horizon Europe](#), [CDTI](#) and [DLR](#), the Spanish company [EOLOS](#) and the German company [sowento](#) collaborated with the Stuttgart Wind Energy team at the [University of Stuttgart](#) on the NEOWIND project to develop a LiDAR modular system (LMS) that is set to become a game-changing technology for site assessment for offshore wind farms.

Synergy of SMEs and research institutions

The NEOWIND team includes sowento, an independent engineering consultancy. The company's main business fields are control engineering, software and wind energy applications – specifically LiDAR and floating offshore wind technology. Stuttgart Wind Energy [SWE](#) is engaged in a variety of national and international research projects, covering development, prototyping and field testing of scanning LiDAR devices, turbine control, offshore load analysis, full scale data validation, floating wind turbine dynamics, design and standardisation.

The NEOWIND partnership between EOLOS, sowento and SWE was highly complementary and brought all expertise together

under one umbrella. “The collaboration effectively combined SWE’s unique scanning LiDAR hardware, sowento’s world-class software development capabilities and EOLOS’s systems engineering and marine operations know-how. Together, this interdisciplinary collaboration and results-driven approach have been key to the success of the project,” explains project coordinator Jordi Puigcorbe.

Developing the LiDAR modular system

LiDAR (light detection and ranging) uses lasers to measure how the frequency of light changes after reflecting off particles in the air. From this change, known as the Doppler effect, wind speed and direction can be determined.

The goal of NEOWIND’s LMS is to collect accurate wind measurements from LiDAR equipment installed on any type of floating platform, such as a boat or an EOLOS buoy. Floating platforms present unique challenges to LiDAR measurements because the roll and pitch of the platform can introduce bias to the measurement data. NEOWIND developed advanced algorithms to compensate for the effects of the platform’s motion and to integrate signals from multiple LiDARs in the same platform.



© EOLOS

The sowento-designed software is able to incorporate in real time the movement of the buoy and compensate for its effect on the measurements of the wind speed and direction. The LMS is capable of accurately capturing the wind direction and turbulence, and the project validated its solution in real-world measurement campaigns in the port of Rotterdam and next to a [meteorological mast](#) in the North Sea.

A roadmap to commercialisation

By project closure, NEOWIND had achieved all of its objectives. The LMS vastly increased accuracy compared to state-of-the-art wind data processing tools. It is capable of integrating different LiDAR technologies deployable via diverse floating platform types, and it is a valuable tool in all offshore wind project phases (development, construction and operation). In particular, the testing of combined vertical profiling and scanning LiDAR in the same buoy prototype has been very successful.



The aim is to revolutionise offshore wind resource assessment by developing the first commercial product: a modular floating LiDAR system that integrates both scanning and vertical profiling LiDAR technologies with advanced data processing.

These encouraging results have led to further funding from [CETPartnership](#) for ongoing research and development. As Puigcorbe shares: "The aim is to revolutionise offshore wind resource assessment by developing the first commercial product: a modular floating LiDAR system that integrates both scanning and vertical profiling LiDAR technologies with advanced data processing." These advances will support the wind energy market by giving producers the information they need to position wind farms for optimal performance.

The consortium brought together EOLOS, sowento and Stuttgart Wind Energy, co-funded by Horizon Europe, the Spanish Centre for the Development of Technology and Innovation (CDTI) and the German Aerospace Center (DLR).

PROJECT NAME

NEOWIND - Next generation of offshore wind Lidar measurements

PROJECT DATES

1 August 2022–1 January 2025

COORDINATED BY

EOLOS in Spain

FUNDED UNDER

Eurostars-3, European Partnership on Innovative SMEs

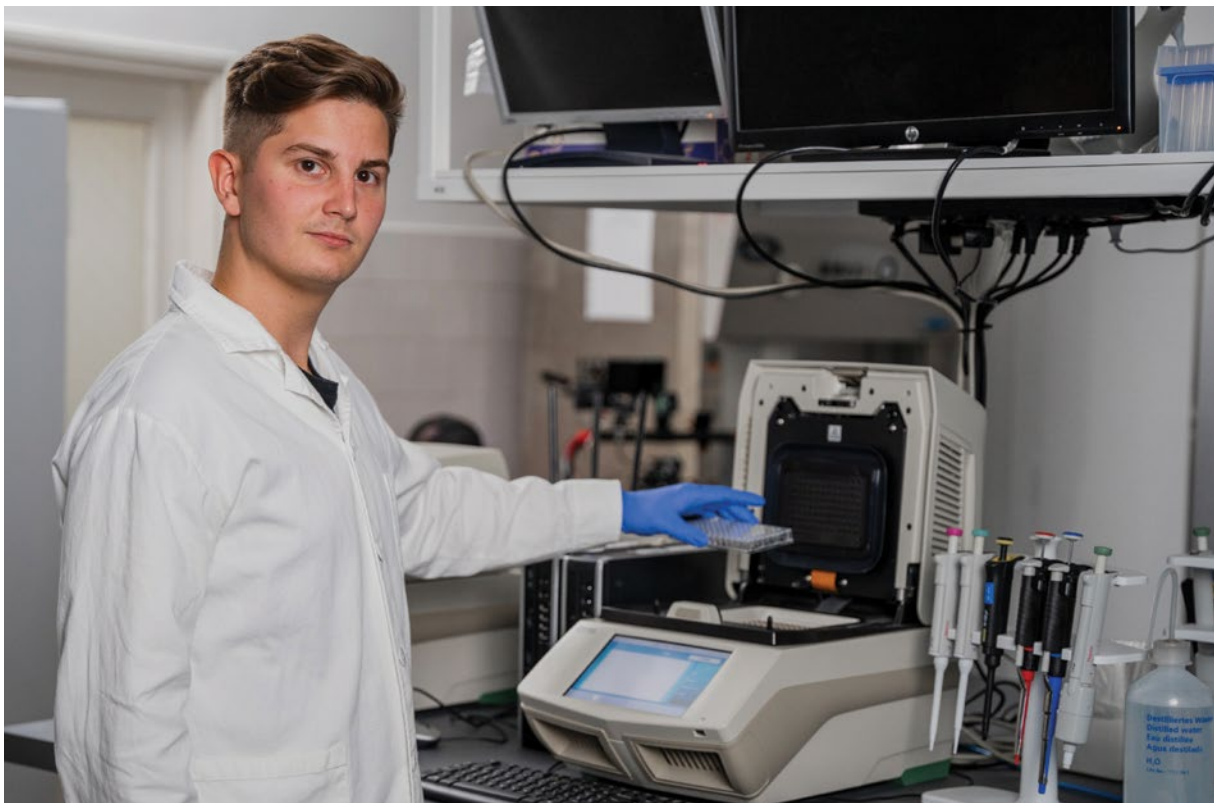
PROJECT WEBSITE

eolos.com/neowind-rd-project-excellent-execution-and-final-results/



Engineered enzymes accelerate viral diagnosis to minutes

Extraction-free molecular diagnostics promise faster, simpler and more accessible viral testing. The RVDR project delivers ultra-rapid detection directly from saliva.



© Zsolt Lőrincz

The COVID-19 pandemic made it clear that advanced healthcare systems struggle to scale molecular diagnostics quickly enough during emergencies. A major reason is the dependence of molecular assays on nucleic acid extraction, which is a labour-intensive step that slows testing and requires specialised infrastructure. This bottleneck becomes especially problematic in resource-limited settings, where cold-chain logistics and trained personnel are not always available.

Most viral diagnostics rely on [polymerase chain reaction \(PCR\)](#), which detects viral RNA or DNA following extraction and amplification of genetic material from patient samples. While highly sensitive, this workflow introduces delays that can hinder timely clinical decision-making and outbreak control. Fast and accurate viral detection is essential for preventing transmission, enabling timely treatment and guiding public health responses during outbreaks.

Faster diagnostic workflow

Funded by the EU through [Horizon Europe](#), [NKFIH](#) and [Innovate UK \(UKRI\)](#), the RVDR project recognised this gap and set out to develop a new generation of extraction-free diagnostic technologies that could make rapid molecular testing widely accessible. In conventional assays, extraction adds 30-60 minutes and requires specialised equipment, trained personnel and cold-chain logistics.

The RVDR approach enables raw samples to proceed directly to amplification, cutting the total turnaround to as little as 15-30 minutes and reducing hands-on procedures to a minimum. "RVDR tackled one of the most persistent constraints of molecular testing by removing the need for nucleic acid extraction, significantly expediting viral detection," explains project coordinator Zsolt Lőrincz.



RVDR tackled one of the most persistent constraints of molecular testing by removing the need for nucleic acid extraction, significantly expediting viral detection.

Integration into existing workflows and future directions

The RVDR formulations were designed to integrate seamlessly with existing diagnostic devices, particularly portable and point-of-care systems. The stability of these reagents eliminates many of the operational barriers that limit current assays in field environments. "Our approach also has potential to find application beyond viral diagnostics," highlights Lőrincz.

The same biochemical features make the technology promising for bacterial pathogen detection, food safety testing and environmental surveillance. This versatility establishes a new standard for decentralised diagnostics, strengthens its potential impact across multiple sectors and offers a powerful tool for future outbreak preparedness.

Improved assay reagents

Overcoming the inhibitory components of saliva was central to the project's innovation strategy. The team developed optimised engineered enzymes that retain activity under physiologically relevant salt and inhibitor concentrations. A key breakthrough was BeaSTEx, a redesigned [Bst polymerase](#) used for DNA amplification. BeaSTEx exhibits higher catalytic efficiency and amplification kinetics compared to the native enzyme. These enhanced properties make this enzyme ideal for fast assays.

Automated, high-throughput screening enabled the evaluation of thousands of formulation candidates, revealing stabilisers and kinetic enhancers that accelerated enzyme performance without compromising specificity. The team also created air-dried reagent formats that can be stored without refrigeration and can be instantly rehydrated. These combined advances allowed RVDR to produce ultra-rapid assays capable of reliable detection in challenging matrices such as untreated saliva, setting a new benchmark for the speed of molecular diagnostics.

The next phase involves scaling up production under ISO9001 and ISO13485 quality standards, completing stability studies and transferring the formulations to commercial diagnostic platforms. The team also aims to build partnerships to support deployment in remote and resource-limited settings.

The consortium brought together TargetEx Biosciences and PCR Biosystems UK, co-funded by Horizon Europe, the National Research, Development and Innovation Office in Hungary (NKFIH) and the UK's Innovation Agency (Innovate UK).

PROJECT NAME

RVDR - Rapid viral diagnostics reagents, without the need for nucleic acid extraction

PROJECT DATES

1 January 2023–1 January 2025

COORDINATED BY

TargetEx Biosciences in Hungary

FUNDED UNDER

Eurostars-3, European Partnership on Innovative SMEs



Seaweed: the future of bioplastic food packaging

Compatible with existing industrial facilities, seaweed-based ready-to-use pellets designed for manufacturing companies offer a high-performance, cost-effective alternative to plastic food packaging.

Single-use plastics found in food packaging are one of the most visible examples of unsustainable consumer behaviour. Industries around the world are on the hunt for biodegradable alternatives to petroleum products.

Plant-based packaging can improve sustainability, but it also presents ecological drawbacks. Cultivating plants requires significant amounts of fresh water and arable land that could be used for food production. With funding from the EU through [Horizon Europe](#), [Forskningsrådet](#) and [CDTI](#), two European SMEs worked together in the SeaweedPack project to establish the commercial viability of seaweed as a biomass source for sustainable food packaging.

The future is seaweed

Norway's kelp forests are a vast resource with the potential to significantly reduce carbon emissions. The [B'ZEOS](#) company, founded in 2018 with the mission to provide eco-friendly, ocean-based solutions, recognised the value of kelp in creating sustainable packaging products. "Unlike other plant-based bioplastics derived from land crops, seaweed is abundant, fast-growing and requires no fresh water, fertilisers, or arable land," shares B'ZEOS CTO and project coordinator Adriana Kyvik.

Seaweed is used in a wide range of applications, including food and biofuel. B'ZEOS focused on valorising seaweed biomass after higher-value compounds had been extracted. The company processes the remaining material to isolate polysaccharides, which are formulated into pellets that can be used by packaging manufacturers.



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B'ZEOS seaweed-based pellets follow a plug-and-play approach. Our pellets can be seamlessly integrated into conventional equipment used in current industrial processes, requiring no modification of current machinery. This enables us to achieve a scalable and price-competitive impact.

A versatile approach

Achieving rapid market uptake for the SeaweedPack solution depends on three key factors: cost-efficiency, high performance and regulatory compliance. B'ZEOS developed three types of extruded pellets that can be used to make flexible films, thermoformed items and rigid items.

The cost-efficiency of these pellets relies on seaweed's abundant biomass availability and the capacity to feed the pellets into existing machinery without time-consuming adjustments or new equipment. B'ZEOS innovation manager Blanca Barrios explains: "B'ZEOS seaweed-based pellets follow a plug-and-play approach. Our pellets can be seamlessly integrated into conventional equipment used in current industrial processes, requiring no modification of current machinery. This enables us to achieve a scalable and price-competitive impact."

SeaweedPack has successfully met all of its objectives. The project has obtained functional prototypes and analysed their properties. Tests have shown that packaging made from seaweed is appropriate for dry foods and items that must be peeled, washed or shelled before consumption, such as vegetables and eggs. A lifecycle assessment of the project's solution also showed positive environmental performance, with reduced pressure on forests and potential benefits to marine ecosystems.

"The results of the project have created a working model of the technology," adds Barrios, "unlocking the potential to further work on scalability of the production process to reach commercial readiness in the near future." The future is indeed seaweed, as B'ZEOS's pellets are on track to reach full commercial scale within a year.

The consortium brought together B'ZEOS and Moses Productos, co-funded by Horizon Europe, the Research Council of Norway (Forskningsrådet) and the Spanish Centre for the Development of Technology and Innovation (CDTI).

Demonstration at scale

To confirm the success of its plug-and-play solution, B'ZEOS needed an industrial partner. Located in Zaragoza, Spain, [Moses Productos](#) is a client-oriented producer of plastics. Using technologies such as injection, moulding, thermoforming and extrusion, Moses Productos partnered with B'ZEOS to produce home-compostable food packaging made from seaweed.

The partnership between the two companies was a fruitful one. As Barrios notes: "The most valuable aspect of the collaboration was access to larger-scale machinery and technical expertise for scale-up and material characterisation."

PROJECT NAME

SeaweedPack - Seaweed-based flexible and home-compostable food packaging

PROJECT DATES

1 October 2022–1 January 2025

COORDINATED BY

B'ZEOS in Norway

FUNDED UNDER

Eurostars-3, European Partnership on Innovative SMEs

PROJECT WEBSITE

mosesproductos.com/en/rd/seaweedpack-project/



CORDIS Results Pack

Available online in six language versions: cordis.europa.eu/article/id/463251



Published

on behalf of the European Commission by CORDIS at the
Publications Office of the European Union
L-2985 Luxembourg
LUXEMBOURG

cordis@publications.europa.eu

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**This Results Pack is a collaboration between CORDIS, the
Directorate-General for Research and Innovation and the Eureka Network.**



Co-funded by
the European Union

Print ISBN 978-92-78-45044-1 ISSN 2599-8285 doi:10.2830/7877245 OA-01-25-131-EN-C
PDF ISBN 978-92-78-45043-4 ISSN 2599-8293 doi:10.2830/8841151 OA-01-25-131-EN-N

Luxembourg: Publications Office of the European Union, 2026

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