EARTO
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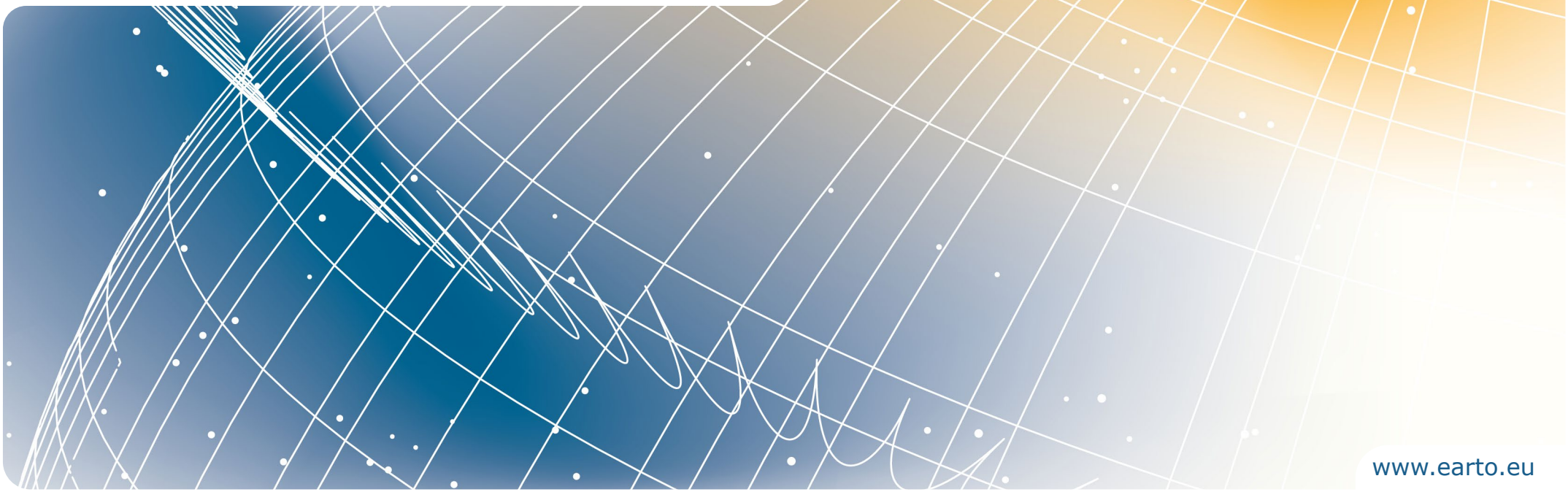
EARTO INNOVATION AWARDS 2026

FROM RESEARCH TO INDUSTRIAL POWER: SCALING EUROPE'S CRITICAL TECHNOLOGIES



www.earto.eu

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EARTO - European Association of Research and Technology Organisations

Founded in 1999, EARTO promotes RTOs and represents their interest in Europe. EARTO network counts over 350 RTOs in more than 32 countries. EARTO members represent 228,000 highly-skilled researchers and engineers managing a wide range of innovation infrastructures.

CONTRIBUTE
EU RD&I PROGRAMMES
GLOBAL CHALLENGES
EUROPE'S
INDUSTRIAL COMPETITIVENESS
EUROPEAN RESEARCH AREA

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EARTO **INNOVATION AWARDS 2026**

From the lab to your everyday life. RTOs innovate to improve your health and well-being, your safety and security, your mobility and connectivity. RTOs' technologies cover all scientific fields. Their work ranges from basic research to new products and services' development. RTOs are non-profit organisations whose core mission is to produce, combine and bridge various types of knowledge, skills and infrastructures to deliver a range of research and development activities in collaboration with public and industrial partners of all sizes. These activities aim to result in technological and social innovations and system solutions that contribute to and mutually reinforce their economic, societal and policy impacts.

18 Years - EARTO Innovation Awards

453 APPLICATIONS
62 RTOS
23 COUNTRIES

87 WINNERS
24 RTOS
21 COUNTRIES

IMPACT
DELIVERED

For this category, the rewarded innovations (product or services) have social and/or economic relevance, innovative originality, are today on the market and have proven their impact.

IMPACT
EXPECTED

For this category, the rewarded innovations (product or services) have social and/or economic relevance, innovative originality, are not yet on the market as a final product/service but promise to have a great impact.

The award competition is adjudicated by an independent jury

Eszter Lakos,
Member of the European Parliament

Georg List,
Vice President of Corporate Strategy, AVL List GmbH & WG R&I Chair, BusinessEurope

Elisa Rivera,
General Director of Planning, Coordination & Knowledge Transfer, Ministry of Science and Innovation of Spain

Michiel Scheffer,
President of the Board of the European Innovation Council

IMPACT DELIVERED

Discover more innovations from RTOs

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1ST

JSI

Unlocking Grid Capacity with Dynamic Thermal Rating

The rapid integration of renewable energy sources and rising electricity demand are placing unprecedented stress on transmission networks. Power flows are becoming more variable, while grid expansion remains slow and costly. Transmission system operators, therefore, need to use existing infrastructure more efficiently while maintaining safety and reliability.

Innovation

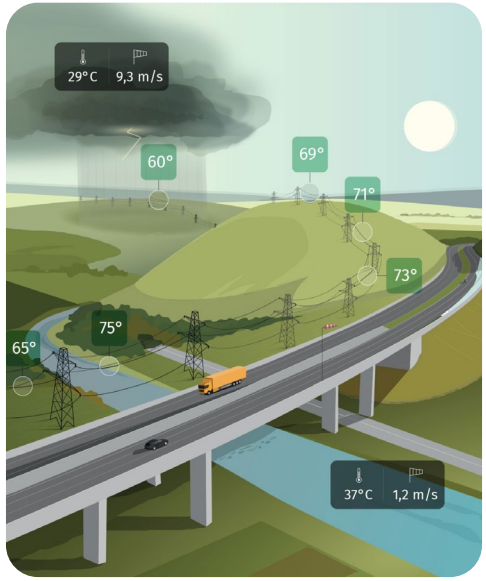
DyThera is an advanced Dynamic Line Rating software deployed within the SUMO Dynamic Rating System. It supports real-time and forecast-based operation by extending classical thermal models with improved representations of convection, radiation, solar heating, rain, and icing. A key innovation is its probabilistic approach, incorporating weather and model uncertainties to deliver ampacity forecasts with defined confidence intervals. DyThera can run as a standalone tool, via an online interface, or fully integrated into operational control systems.

Impact Delivered

In practice, DyThera enables 20 to 50% higher transmission capacity most of the time while maintaining safety clearances. This improves renewable integration, reduces congestion and redispatch costs, and helps defer grid reinforcements. During extreme events such as icing or heat waves, DyThera provides decision support that increases grid resilience and can reduce economic losses.

About the RTO

Jožef Stefan Institute (JSI) is the leading Slovenian scientific research institute, covering a broad spectrum of basic and applied research in natural sciences, life sciences and engineering, experimental development, and technology transfer, including environmental monitoring, biosensing, and analytical technologies.



Jožef Stefan Institute
Ljubljana, Slovenia

www.ijs.si

2ND

LIST

LIST magSIMS nano-imaging instrument to empower the green and health transitions

Structural characterisation and chemical analysis at the nanometre scale are essential across fields such as electronics, biology, and geology, but common high-resolution imaging tools offer limited possibilities. Existing commercial instruments are unable to deliver true nanoscale performance in terms of the required spatial resolution combined with chemical sensitivity.

Innovation

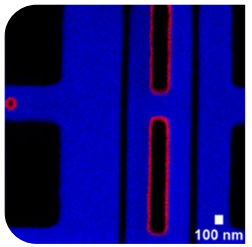
EARTO Member Luxembourg Institute of Science and Technology (LIST), in collaboration with Raith, leader in nanofabrication, developed magSIMS, an advanced mass spectrometer built on a decade of RD&I in ion–matter interactions, charged-particle optics, instrument development, and field testing. Its unique performance makes it the leading tool for nanometre-scale structural and chemical analysis.

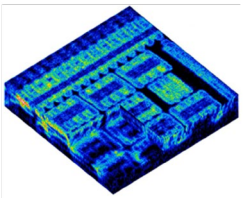
Impact Delivered

This innovation is a cross-cutting enabler designed to address the interconnected global challenges by delivering the data needed for Europe's transition to a carbon-neutral, pollution-free, and technologically sovereign future. The magSIMS technology is a successful industrial transfer, used daily in world-class institutes.

About the RTO

LIST is a public research centre focused on multidisciplinary research and innovative technologies, collaborating with public and private partners to address societal challenges.





3RD

INESC TEC

AIR – Shaping complex industrial decisions with AI

Across industries, organisations generate vast amounts of data, yet many critical decisions are still taken using fragmented analyses. In fast-moving sectors such as retail, logistics, energy and healthcare, this gap limits sustainability and competitiveness. The challenge is no longer collecting data, but transforming it into high-impact decisions.

Innovation

AIR is an AI acceleration platform that bridges AI and advanced analytics models and real-world decision-making. It combines reusable AI libraries, scalable orchestration and customisable online interfaces to rapidly deliver planning, sizing and scheduling solutions, enabling decision-makers to extract tangible value from AI at scale. AIR is an innovation leveraged by LTPlabs, an INESC TEC spin-off, to dramatically reduce the time-to-market of its customised solutions, already delivering measurable operational, economic and social impact across multiple industries.

Impact Delivered

AIR is fully deployed on the market and has been applied in over 190 industrial projects for more than 30 companies across 20+ countries. It has delivered cost reductions of up to 40%, multi-million-euro annual savings, and significant sustainability benefits. In retail, AIR enabled the optimal handling of over 1 million near-expiry products, preventing 810 tonnes of food waste and generating more than €3.5 million per year in efficiency gains and reduced stock depreciation.

About the RTO

INESC TEC is a leading Portuguese Research and Technology Organisation that advances science and technology to promote innovation and deliver societal and economic impact across multiple sectors.

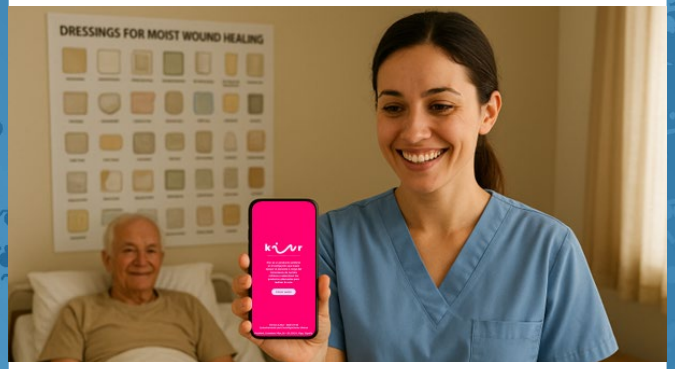
INESCTEC

Shaping Decisions with AI

www.inesctec.pt

www.ltplabs.com

KIUR: A New Standard in Chronic Wound Treatment



Chronic Wounds (CW) are a growing healthcare challenge, consuming up to 5% of healthcare budgets and requiring complex management. With ageing populations, rising incidence, and nursing shortages, non-expert staff often make treatment decisions, leading to variability, prolonged healing, and higher costs.

Innovation: KIUR is an innovative AI-based Clinical Decision Support System developed by ATIGA-Gradiant, in cooperation with the Galician Healthcare System. It revolutionises chronic wound care by empowering healthcare professionals, regardless of experience, to select optimal products for chronic wound treatment. By reducing variability, accelerating healing, and lowering costs, KIUR improves patient outcomes and quality of life. Unlike existing tools, KIUR is being certified as a Class IIa medical device under the Medical Device Regulation (MDR), backed by robust clinical evidence. Its explainable AI algorithm ensures safe, unbiased recommendations tailored to each institution's product catalogue.

Impact Delivered: KIUR benefits patients by reducing pain, distress, and social isolation caused by prolonged healing, while easing the burden on families. For healthcare providers, it sets a standard for treatment selection, reduces mental workload, and optimises resource use. Scalable and accessible, KIUR will pioneer a global standard for chronic wound care, transforming healthcare into a more efficient, compassionate system, and contributing to a healthier, more resilient society.

ATIGA is the alliance of the seven Galician technology centres, with the mission to generate and transfer technology to the productive sector, with a vocation to serve society and business. With 1700 employees and more than 2000 customers, ATIGA is a strategic ally for applied RD&I with impact in the market.

www.atiga.es | www.gradiant.org

LINQ – Industrial non-destructive testing for mechanical properties in metal parts

High-volume industrial manufacturers aim for zero defects, yet critical mechanical properties in metal parts (e.g. hardness after heat-treatment) are still verified mainly through destructive laboratory testing. Parts must be cut and analysed, which is slow, costly and sample-based. This leaves uncertainty in mass production and increases the risk of defective components reaching customers.

Innovation: LINQ delivers industrial inspection machines for Non-Destructive Testing (NDT) of metal parts. The machines combine electromagnetic sensing, industrial electronics and software analytics to objectively verify material condition and detect defects without damaging the component. This enables repeatable inspection outputs and part-level traceability suitable for industrial quality assurance.

Impact Delivered: LINQ reduces scrap and destructive testing, improves process control and helps manufacturers detect deviations earlier. By strengthening traceability and preventing defect escapes, the innovation supports safer products, improved compliance and increased trust across industrial supply chains, including automotive OEMs (Original Equipment Manufacturers) and Tier-1 suppliers.

CEIT is a Research & Technology Organisation in San Sebastián (Spain) focused on industrial R&D, advanced materials and manufacturing, enabling technology transfer to industry.

www.ceit.es | www.linqcase.com

EFLOPs – Measuring AI efficiency for smarter edge devices

As the demand for AI systems grows, deploying energy-efficient deep neural networks has become a critical challenge. Both Spiking Neural Networks (SNNs) and Artificial Neural Networks (ANNs) offer promising solutions by exploiting sparsity to accelerate computation and reduce energy consumption on modern hardware. However, current evaluation methods fail to accurately capture the computational cost of running these models on sparsity-aware devices. This limitation has hindered fair comparisons between ANNs and SNNs and slowed progress toward efficient, sustainable AI.

Innovation: To address this gap, CSEM has developed EFLOPs (Effective FLOPs), a novel benchmarking framework designed to measure the real computational cost of modern AI models. By accounting for both structural sparsity in the model architecture and dynamic sparsity arising at runtime, EFLOPs provides fair comparisons and efficient model design.

Impact Delivered: The impact of this approach extends across both research and industry, enabling consistent, realistic efficiency measurement from early model development through deployment. By making efficiency measurable in a realistic way, EFLOPs empowers developers to design AI systems that are not only high-performing but also energy-efficient and deployable on edge devices. This facilitates faster innovation, reduces reliance on energy-intensive cloud computing, and opens the door to more responsive applications.

CSEM is a Swiss technology innovation centre that develops and transfers advanced technologies with high societal impact to industry.

www.csem.ch

Asset Administration Shell Dataspace for Everybody

Secure and efficient data sharing is a cornerstone of Industry 4.0, yet today many companies struggle to exchange data across organisational boundaries. Technical complexity, high setup costs, and concerns about data sovereignty are major obstacles - especially for SMEs - preventing them from participating in digital ecosystems such as Digital Product Passports or cross-company digital twins. A European data space infrastructure is envisioned to support organisations.

Innovation: The AAS Dataspace for Everybody is a market-ready, federated data space Platform as-a-Service that enables sovereign, standards-based data exchange using the Asset Administration Shell conforming to Catena-X and Manufacturing-X. It enables rapid prototyping by providing a complete data space infrastructure while keeping data local and under full control. Preconfigured infrastructure blueprints and managed operations reduce deployment time from months to days and drastically lower technical entry barriers.

Impact Delivered: The innovation is already deployed in practice, including Digital Product Passports, industrial plant engineering, material data sharing, and monitoring of critical infrastructure such as bridges. It reduces integration effort significantly, enables new data-driven business models, supports sustainability use cases like carbon footprint reporting, and allows SMEs to participate in industrial data ecosystems.

Fraunhofer

Fraunhofer IESE

Fraunhofer Institute for Experimental

Fraunhofer Institute for Experimental Software Engineering (IESE) is one of the 75 institutes/research units of Fraunhofer, a leading Research and Technology Organisation for applied research, experimental development and technology transfer.

www.fraunhofer.de | www.iese.fraunhofer.de

CICLOPE: Ground-Based Wildfire Monitoring at Scale

Wildfires can escalate in minutes, especially when visibility is poor and networks are overloaded. CICLOPE helps emergency services gain early, reliable situational awareness so they can respond faster, more efficiently, and coordinate better.

Innovation: CICLOPE is a market-ready ground surveillance service that combines fixed monitoring towers equipped with long-range high-visibility cameras and resilient power/communications with a central software platform used in Control & Command Centres. It delivers 24/7 geo-referenced live video and automated detection that flags early fire cues (smoke, hot spots or flames) to support confirmation, location, characterisation, and tracking.

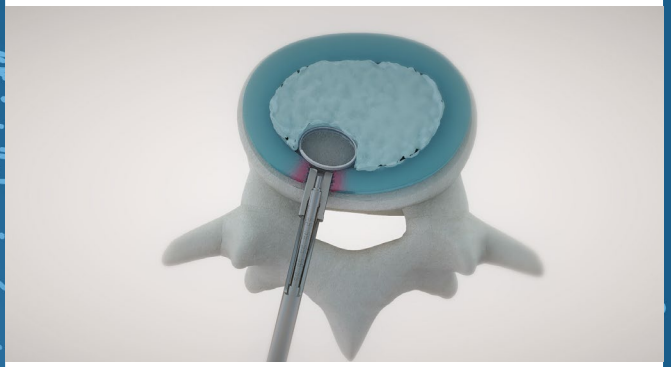
Impact Delivered: CICLOPE is already in operational use, monitoring ~4,7 million hectares — around 45% of mainland Portugal, as well as in various locations in Greece — and supporting command-and-control operations across the territory. It is deployed under more than 20 client contracts representing 160 fixed towers. By accelerating verification and guiding targeted dispatch, CICLOPE helps limit fire growth, protect communities and ecosystems, and reduces unnecessary mobilisations.

INOV inesc

INOV researches, develops and transfers ICT and electronics technology, turning knowledge into solutions that boost organisations' performance and competitiveness.

www.inov.pt

DISC care: Hernia Blocking System for Lumbar Disc Surgery



Lumbar disc herniation is one of the most common causes of chronic back and leg pain in working-age populations and a leading reason for spinal surgery. While discectomy is an effective treatment, a significant number of patients experience recurrent disc herniation, often requiring additional surgeries and prolonged recovery.

Innovation: DISC care is an implantable Hernia Blocking System designed to be used after a limited lumbar discectomy. By sealing the annular defect left after surgery, the device prevents nucleus re-extrusion while preserving the natural biomechanics of the intervertebral disc. Its expandable and flexible design allows safe implantation using standard surgical techniques and integrates seamlessly into existing clinical workflows.

Impact Delivered: By preventing recurrent herniation, DISC care has the potential to significantly reduce reoperations, long-term disability and the need for more invasive procedures such as spinal fusion. This translates into improved patient quality of life, faster return to work and substantial savings for healthcare systems, contributing to more sustainable and effective spinal care.

tecnalia
MEMBER OF BASQUE RESEARCH & TECHNOLOGY ALLIANCE

eurecat

Tecnalia is the largest Research and Technology Organisation in Spain and a member of the Basque Research and Technology Alliance (BRTA). We transform technological research into prosperity.

Eurecat is a leading Research and Technology Organisation in Europe that accelerates business innovation by transforming scientific and technological knowledge into real solutions with economic, social, and environmental impact.

www.tecnalia.com | www.eurecat.org

AIKON HeartLinQ: Non-Invasive Intelligence for Heart Failure Care

Heart failure is one of the leading causes of hospital readmissions worldwide, placing a heavy burden on patients, clinicians, and healthcare systems. Early deterioration often goes undetected after discharge, as existing monitoring solutions are either invasive, intermittent, or poorly adopted by patients at home.

Innovation: AIKON HeartLinQ is a next-generation, non-invasive wearable solution transforming heart-failure management from hospital to home. Using a stretchable patch and reusable electronics pod, it captures synchronised electrophysiological, respiratory, fluid, and hemodynamic signals without implants or active patient involvement. Its advanced dry-electrode technology enables long-term, clinical-grade data collection, supporting earlier detection of decompensation and more personalised, data-driven therapy optimisation.

Impact Delivered: By enabling timely intervention during the high-risk post-discharge period, HeartLinQ has the potential to reduce preventable hospital readmissions, improve patient quality of life, and lower healthcare costs. Its scalable, non-invasive design makes advanced heart-failure monitoring accessible to a broad patient population, while reducing reliance on invasive procedures and resource-intensive care.

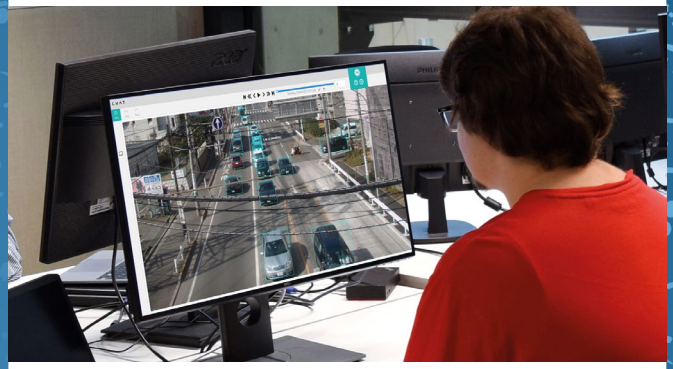
TNO innovation for life

AIKON HEALTH

TNO is the Netherlands Organisation for Applied Scientific Research, a leading European Research and Technology Organisation that transforms scientific research into impactful innovations for health, industry, and society.

www.tno.nl | www.aikonhealth.com

Fair Annotation for All - Jobs and Impact



Artificial Intelligence depends on high-quality labelled data, yet annotation work is often outsourced to low-wage countries under precarious conditions. At the same time, many talented people with disabilities remain excluded from the labour market. The training station allows the assessment of candidates' potential for the role of annotator and thus serves as the foundation of the business. Responsible Annotation Services (RAS) addresses both challenges by combining AI excellence with social responsibility.

Innovation: Founded in 2025 as a spin-off of the Software Competence Centre Hagenberg (SCCH), Responsible Annotation Services delivers fair, high-quality data annotation while creating qualified jobs for underrepresented groups, especially people on the autism spectrum. Continuous quality control, automated evaluation metrics, and responsible working conditions ensure both technical excellence and ethical standards.

Impact Delivered: RAS demonstrates how research-driven innovation can deliver measurable social and economic impact. It improves AI performance through high-quality data, reduces unemployment among people with disabilities, and strengthens data sovereignty by offering GDPR-compliant annotation services in Europe. With initial projects already showing significant AI performance gains and strong customer satisfaction, RAS proves that fair work and technological excellence go hand in hand.

UAR Upper Austrian Research GmbH

scch { software competence center hagenberg }

Software Competence Centre Hagenberg (SCCH) is a leading Austrian RTO in applied AI research, driving technology transfer through industry collaboration and successful spin-offs.

Upper Austrian Research GmbH (UAR) is the leading organisation for non-university research in Upper Austria. It promotes innovative solutions and provides access to excellent R&D capacities.

www.uar.at | www.scch.at

IMPACT EXPECTED

Discover more innovations from RTOs

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1ST

CSEM

ORYL F1:
Faster solubility testing for drug discovery

Solubility testing is a major bottleneck in drug discovery and early development. Current gold-standard methods rely on slow, solvent-intensive High-Performance Liquid Chromatography (HPLC) workflows that consume large amounts of energy, chemicals, and valuable compounds. These limitations slow down R&D and contribute to late-stage project failures.

Innovation

ORYL F1 is a high-throughput solubility and aggregation profiling instrument developed by CSEM in collaboration with ORYL Photonics and University of Northwestern Switzerland (FHNW). Using complementary Second Harmonic Scattering (SHS) and Linear Light Scattering (LLS), ORYL F1 detects the earliest stages of molecular aggregation at extremely low concentrations. The industrial-grade prototype scans a full 384-well plate in about 15 minutes, delivering up to 100× higher throughput while requiring 100× less compound than traditional HPLC-based methods.

About the RTO

CSEM is a Swiss technology innovation centre that develops and transfers advanced technologies with high societal impact to industry.

Impact Expected

By eliminating filtration, separation, and solvent-heavy workflows, ORYL F1 reduces chemical use by up to 99% and energy consumption by 97%. It enables faster, greener, and more reliable solubility decisions across a wide range of therapeutics, from small molecules to complex biologics. This allows pharmaceutical researchers to identify viable drug candidates earlier, reduce development risk, and accelerate the delivery of safer, more effective medicines.

csem
www.csem.ch

ORYL
www.orylphotonics.com

2ND

LEITAT

OGYX: the next generation cost-effective, human-relevant discovery platforms

Many promising drugs fail in clinical trials because conventional in vitro tests and animal models do not truly mirror human physiology, while also raising serious ethical concerns. Organ-on-a-Chip (OoC) technologies address this by recreating human organ functions in miniature, but current high-throughput (HT) formats often lose essential 3D co-culture complexity and require cumbersome equipment.

Innovation

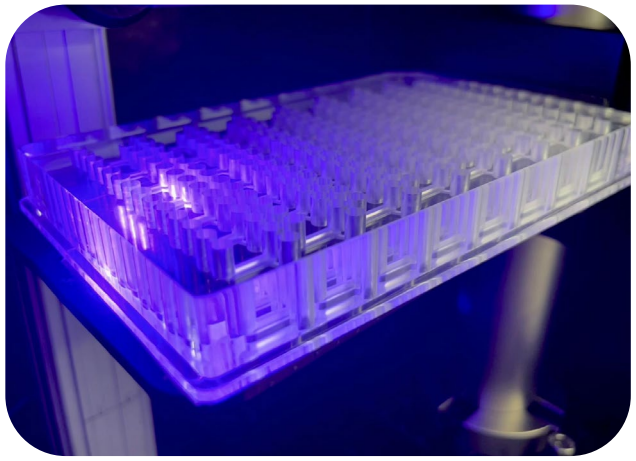
Leitat has developed a gravity-driven microfluidic OoC plate that combines true HT screening with advanced biology. Its membrane-free design supports 2D/3D co-cultures without pumps or tubing, is scalable by injection moulding, and remains intuitive to set up, monitor, and analyse. Its design-for-detection (D4D) approach ensures robust, multiplexed readouts and perpendicular imaging with standard lab plate readers.

About the RTO

Leitat is a leading Research and Technology Organisation based in Barcelona (Spain). It boosts the competitiveness and productivity of the industry through innovative technological solutions that generate a positive impact on society.

Impact Expected

By aligning cutting-edge microfluidics with evolving EU regulations, Leitat's platforms enable robust, cost-effective, non-animal drug discovery and personalised medicine. This will accelerate industrial adoption of OoC technologies, help phase out 60% of all animal testing, driving significant social, environmental, and economic benefits.

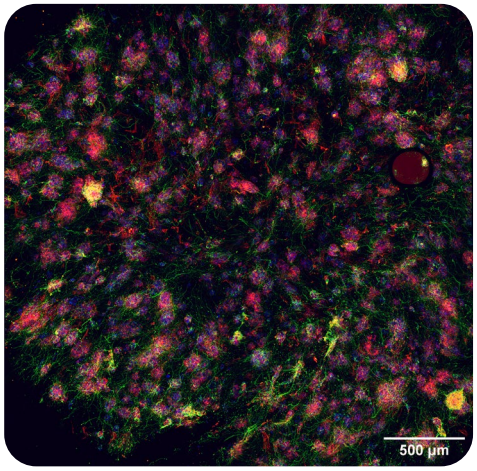


LEITAT
managing technologies
www.leitat.org

3RD

TECNALIA

FATRIXGEL: Where cells drive in 3D



Current 3D cell culture models rely on animal-derived or synthetic materials that lack the complexity of human extracellular matrix (ECM), exhibit batch variability, and fail to replicate tissue-specific microenvironments, leading to poor translational predictability and high drug attrition in clinical trials.

Innovation

FATRIXGEL is a 100% human-derived hydrogel that mimics the native extracellular matrix with high fidelity, enabling physiologically relevant 3D cultures through a patented, scalable decellularisation process that preserves up to 90% of native ECM proteins, including basement membrane components.

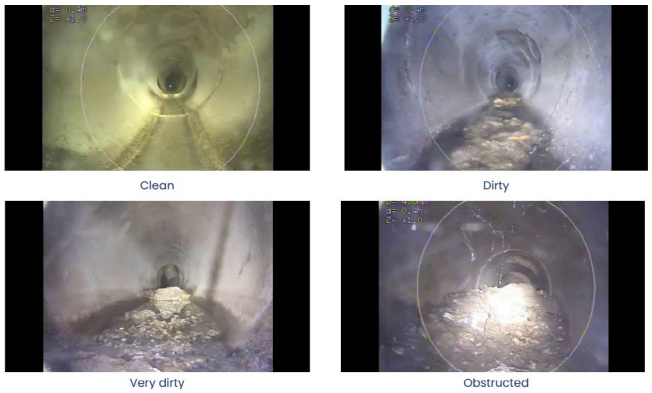
Impact Expected

By replacing unreliable matrices with a reproducible, human-relevant, and tunable platform, FATRIXGEL accelerates drug discovery, reduces animal testing, and improves therapeutic development, with the potential to transform biomedical research and reduce late-stage drug attrition by 15%.

About the RTO

Tecnalia is the largest Research and Technology Organisation in Spain and a member of the Basque Research and Technology Alliance (BRTA). We transform technological research into prosperity.

Computer Vision for Water Plant Operations



Operational teams at wastewater treatment plants still rely on manual, subjective visual checks to spot critical events such as foaming, abnormal centrate conditions or unusual influent discharges. These events can escalate quickly and impact process stability, compliance and operating costs.

Innovation: Cetaqua developed a scalable "computer vision as a virtual sensor" solution for Wastewater Treatment Plants (WWTPs). Standard industrial cameras capture images at key points, and a shared cloud pipeline runs deep-learning models to quantify foam coverage, classify centrate quality (adequate/excess/lack/empty) and detect influent anomalies, such as sudden colour changes or hydrocarbon-like stains. Results are stored with metadata and trigger configurable alerts via email or SMS, enabling faster, consistent responses across shifts.

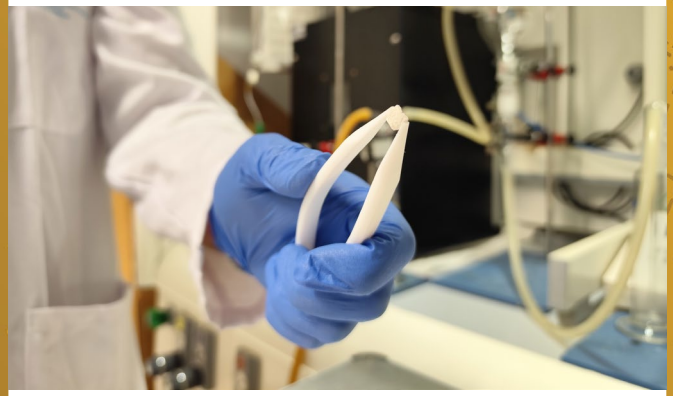
Impact Expected: By providing continuous monitoring and early warning, the solution is expected to reduce time to detect and react to events, support better chemical dosing decisions and decrease the need for routine manual inspections. Industrialisation with Aquatec will enable scalable deployment as a service for water utilities and WWTP operators in Europe within the next 3 years.

CETAQUA
WATER TECHNOLOGY CENTRE

Cetaqua is a water technology centre turning R&D into deployable solutions for the urban water cycle, supporting utilities and technology partners.

www.cetaqua.com

Technologies for a truly green transition: CO_2-Valorisation through Permanently Polarised Hydroxyapatite (2P-HAp)



Achieving an economy with a truly net-zero greenhouse gas emission (aligned with the European Green Deal) is extremely challenging and represents important concerns regarding both the sustainability of the solutions and loss of competitiveness.

Innovation: CIT UPC developed a new procedure to customise the catalytic activity of common materials via a controlled atomic re-arrangement. Such treatment enables the use of hydroxyapatite, an abundant ceramic found in bones, as a catalyst to perform *CO_2-valorisation* reactions under mild conditions (2P-HAp). 2P-HAp is capable of producing new added-value products from CO_2 without the need for additional energy sources.

Impact Expected: This innovation will lead to the decarbonisation of the industry without the loss of competitiveness, as 2P-HAp is not only supported by CO_2 taxes but also by the generation of new products that can be reintroduced or sold in the industry. As an example, 2P-HAp converts CO_2 into ethanol (biofuel), thus promoting the transition towards green industries. Additionally, thanks to the fact that the raw material can be obtained from bone waste, 2P-HAp truly positions itself as a sustainable and viable solution in the long-term, boosting circular economies while mitigating climate change effects.

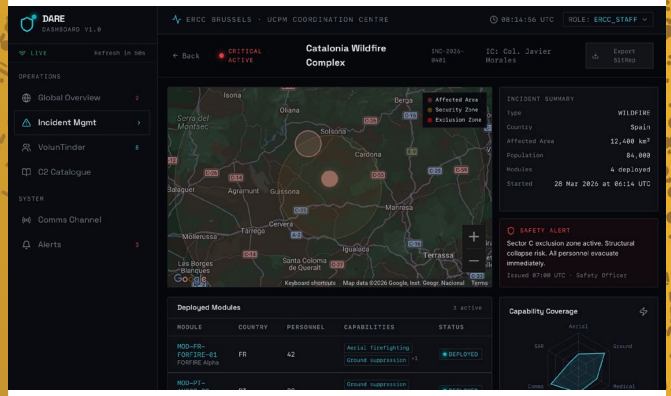
Fedit Centros Tecnológicos de España

CIT UPC CENTRO DE INNOVACIÓN Y TECNOLOGÍA UNIVERSITAT POLITÈCNICA DE CATALUNYA BARCELONATECH

The UPC Technology Centre (CIT UPC) applies the knowledge generated at the Universitat Politècnica de Catalunya – BarcelonaTech (UPC) to create value and an impact on society.

www.fedit.com | www.cit.upc.edu

DARE Platform: Enhancing multi-country disaster response



The changing dynamics of extreme events are increasing the need for international disaster response support. EU Civil Protection Mechanism activations have risen, and national systems are likely to become more strained. Challenges for on-ground integration include legal and governance differences, interoperability hurdles from heterogeneous data formats and systems, language barriers, and varying procedures and experiences that may hamper coordination.

Innovation: The DARE platform breaks interoperability barriers by unifying core situational awareness, data aggregation, incident monitoring, and validation into one open-source platform. It depicts operational capabilities, technical procedures, and command-and-control structures, and uses AI to prioritise information. Multilingual communication and citizen–volunteer engagement further boost readiness. A system-level, cross-country open-source solution to diverse environments, overcoming procurement limits.

Impact Expected: DARE boosts cross-border response for large-scale European incidents. It improves resource efficiency, cutting costs amid climate-driven extremes, and enhances responder safety through better situational awareness. Stronger citizen-volunteer engagement boosts societal resilience and supports Sendai and EU resilience goals.

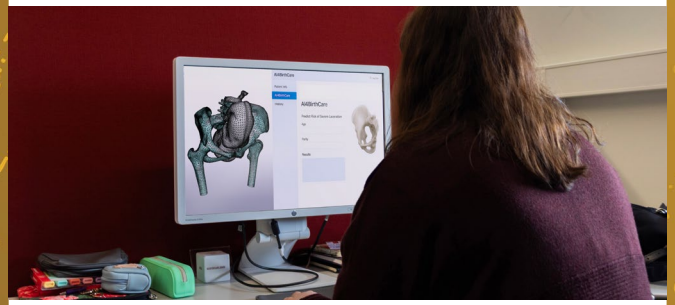
Fraunhofer

Fraunhofer FKIE

Fraunhofer Institute for Communication, Information Processing and Ergonomics (FKIE) is one of the 75 institutes/research units of Fraunhofer, a leading Research and Technology Organisation for applied research, experimental development and technology transfer.

www.fraunhofer.de | www.fkie.fraunhofer.de

AI4BirthCare – Data-Driven Decision Support System for Obstetric Injury Prediction



Maternal injuries related to childbirth remain a major clinical challenge, with significant short- and long-term consequences for women's health. Despite advances in obstetric care, decisions are often made with limited personalised information on each pregnant woman's biomechanical risk profile. AI4BirthCare addresses this gap by introducing a data-driven approach to help clinicians anticipate and prevent birth-related injuries before delivery.

Innovation: AI4BirthCare is a decision support system that integrates patient-specific data, AI, and biomechanical simulations to assess pelvic injury risk prior to birth. By combining clinical and biomechanical information, the system identifies high-risk scenarios and probable injury locations, enabling obstetricians to tailor delivery planning and preventive strategies based on personalised risk predictions.

Impact Expected: By enabling earlier and more informed clinical decisions, AI4BirthCare can reduce maternal injuries, improve recovery outcomes, and enhance obstetric care quality. It promotes safer, personalised birth while fostering collaboration between hospitals, universities, and medical technology companies. As the project advances toward proof-of-concept and higher TRLs, it shows strong potential for clinical adoption and societal impact.

inegi driving science & innovation

INEGI, founded in 1986, is a non profit private Research and Technology Organisation dedicated to fostering value creation across industry, the economy and society through science- and technology-based innovation in the field of engineering.

www.inegi.pt

PREDICO: Boosting Europe's Energy Transition by incentivising collaborative forecasting

As Europe accelerates wind and solar integration, system operators face rising costs and risks from forecast uncertainty. Traditional forecasting depends on a few providers and bilateral contracts, limiting transparency, competition, and improvement. PREDICO tackles this by rethinking how energy forecasts are produced, valued and procured.

Innovation: PREDICO is a collaborative SaaS forecasting platform with an open-core under a dual license. It creates a performance-based market where multiple independent forecasters contribute to ensemble forecasts and are rewarded for their measurable impact on accuracy. Validated in a long-running pilot with Elia Group, PREDICO combines statistical and ML ensemble methods, continuous benchmarking, and auditable market mechanisms to deliver more robust wind and solar forecasts.

Impact Expected: By improving forecast quality (up to 8% RMSE and +14% MWI in operational conditions), PREDICO enables more efficient reverse sizing, fewer corrective actions, and lower system costs. When deployed at scale, such gains are aligned with multi-million-euro annual savings, improved grid reliability, reduced fossil fuel dependence, and stronger cross-border collaboration – supporting Europe's energy sovereignty and the Green Deal objectives.

INESCTEC

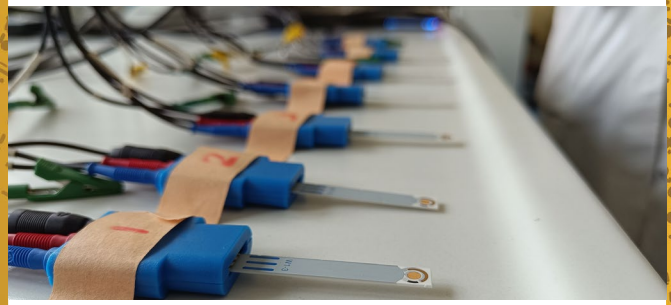
elia | Elia Group

predico

INESC TEC is a European Research and Technology Organisation developing cutting-edge research in energy, AI and digital systems, bridging science and industry to deliver impactful, market-ready innovations.

www.inesctec.pt | www.eliagroup.eu | www.predico-elia.inesctec.pt

Mercury-Sense – A novel biosensing platform for safer fish and reduced methylmercury exposureresponse



Methylmercury is one of the most toxic forms of mercury and poses a serious risk to human health through fish consumption. Current monitoring approaches rely on centralised laboratory techniques that are costly, time-consuming, and often inaccessible for routine screening, limiting effective food safety control.

Innovation: The EARTO member Jožef Stefan Institute, in collaboration with IOS, Institute of Environmental Protection and Sensors, d.o.o., has developed Mercury-Sense, an innovative electrochemical biosensing platform for rapid and selective detection of methylmercury in fish. The technology combines enzyme-based biorecognition inspired by natural mercury detoxification pathways with nanostructured electrochemical sensors. Importantly, the sensing platform takes advantage of proteins that have evolved in bacteria over billions of years, long before the appearance of humans, to naturally recognise and detoxify toxic mercury compounds in the environment. By integrating these highly specialised and evolutionarily refined proteins into the sensor design, Mercury-Sense harnesses nature's own solution for selective methylmercury recognition. This approach enables direct, exposure-relevant measurement of methylmercury rather than total mercury, with the potential for rapid and decentralised testing.

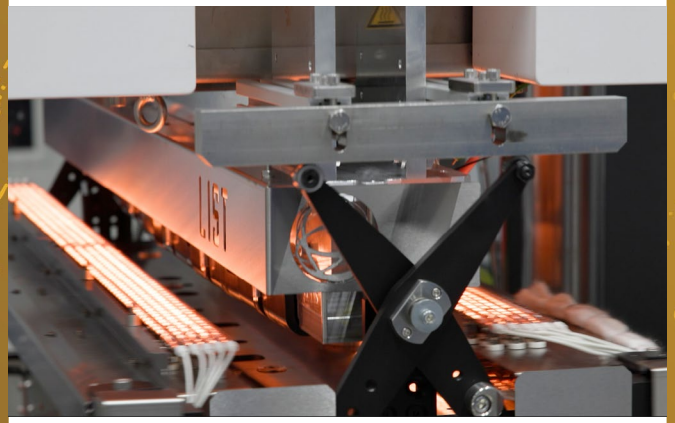
Impact Expected: Mercury-Sense is expected to significantly improve seafood safety monitoring by enabling faster, more cost-effective, and more frequent screening of fish products. The innovation supports regulatory compliance with the Minamata Convention on Mercury, strengthens consumer protection, and contributes to sustainable seafood supply chains. The platform is expected to reach industrial and regulatory pilot deployment within three years, with an initial focus on Europe and scalability to global markets where fish consumption and mercury exposure are of concern.

Jožef Stefan Institute
Ljubljana, Slovenia

Jožef Stefan Institute is the leading Slovenian scientific research institute, carrying out basic and applied research in natural sciences, life sciences and engineering, experimental development, and technology transfer, including environmental monitoring, biosensing, and analytical technologies.

www.ijs.si

LIST Innovative rib design to support sustainable aviation



The global air transport industry is committed to net-zero carbon emissions by 2050, setting a clear path toward sustainable aviation. While most of the effort to decarbonise aviation would be supported using 100% sustainable aviation fuels and novel propulsion technology, fuel-efficient aircrafts will also rely on materials and subsequent manufacturing processes being more efficient and sustainable.

Innovation: EARTO Member Luxembourg Institute of Science and Technology, in collaboration with DAHER, a key player in aerospace, have built a novel rib design through an innovative manufacturing process, i.e. Direct Stamping®, and re-invented assembly solution, i.e. Infrared Welding. Such innovative rib design meets actual decarbonisation and competitiveness challenges in aviation and paves the way for the production of complex and large composite aircraft structures.

Impact Expected: This novel rib addresses major challenges in decarbonisation, cost reduction, and high-rate production for next-generation commercial aircraft. 22% weight saving has been achieved for a wing rib, which results in lower fuel consumption and CO_2 emissions. DAHER expects to extend its business in the aerospace sector by building a new factory fully dedicated to TP ribs production, which could reach 250,000 parts per year by the second half of the 2030s.

LUXEMBOURG INSTITUTE OF SCIENCE AND TECHNOLOGY | LIST

LIST is a public research centre focused on multidisciplinary research and innovative technologies, collaborating with public and private partners to address societal challenges.

www.list.lu

Replacing fossil graphite with an innovative biochar

Łukasiewicz Institute for Sustainable Technologies

FUCHS

Europe needs new, innovative lubricants that are more environmentally friendly and contain Critical Raw Materials substitutes. One of the economic sectors where this is particularly important is the automotive industry, including the lubricant segment. Biochar – produced through the pyrolysis of waste plant biomass – is a value-added substitute for non-renewable raw material (graphite) in the graphite greases.

Innovation: EARTO member Łukasiewicz Research Network developed an innovative biochar grease for the automotive industry, intended for lubricating the elements of suspension, drive, and steering systems of automobiles, as well as different types of gears and chains in industrial, construction, and agricultural machines. The innovation consists of replacing the graphite in classic greases with biochar without any deterioration of basic performance characteristics.

Impact Expected: This innovation can decrease the production costs of plastic greases while lowering the use of the fossil raw material (natural graphite), as well as increasing the turnover of firms introducing the product to the market. It is expected that the biochar grease will enter the Polish market within 3 years. The main target market is Europe, in particular Poland and Germany.

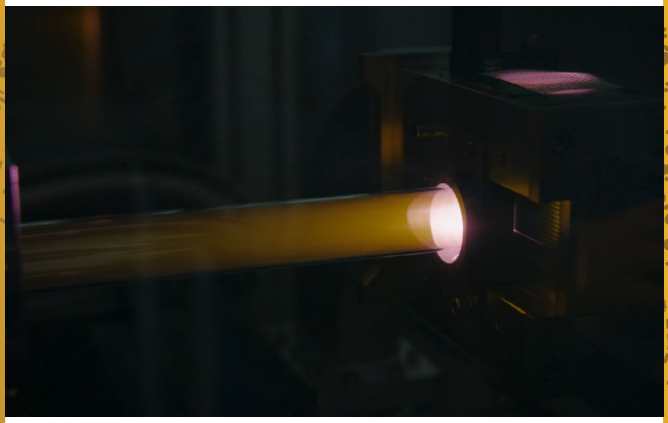
Łukasiewicz Research Network

Łukasiewicz Institute for Sustainable Technologies

The Institute for Sustainable Technologies is part of the Łukasiewicz Research Network, one of the biggest research networks in Europe, with over 7,000 staff and 22 research institutes in 12 cities across Poland.

www.lukasiewicz.gov.pl | www.itee.lukasiewicz.gov.pl

Plasma pyrolysis of methane for the electrification of the chemical industry



Plasma pyrolysis is a novel technology that uses green electricity to achieve extremely high temperatures to drive chemical processes where large activation energies are required. By replacing these fossil fuel-driven chemical processes with plasma technology, legacy processes can be electrified to curb carbon emissions. The plasma pyrolysis process converts waste methane (from electrified crackers or biogas) into valuable hydrocarbons (ethylene) and decarbonised hydrogen.

Innovation: Plasmas offer several advantages, such as direct heating of the process gas, high process intensity, no reliance on critical materials (no catalyst needed), and short on- & off-times allowing intermittent operation, making it compatible with the fluctuating supply of green electricity. In addition to methane pyrolysis, plasma is a promising technology for nitrogen fixation, CO_2 conversion, and plastic recycling.

Impact Expected: The industry accounts for 26% of CO_2 emissions worldwide, with naphtha crackers and ammonia plants the main polluters. With the help of plasma technology, these processes can be made essentially carbon-free. The development of plasma technology proceeds through a unique parallel scaling process, where multiple scales are developed in parallel, to speed up development times and ensure deployment in time to have an impact on the energy and materials transition.

TNO innovation for life

TNO is the Netherlands Organisation for Applied Scientific Research, a leading European Research and Technology Organisation that transforms scientific research into impactful innovations for health, industry, and society.

www.tno.nl

SINK.CARBON – Turning Buildings into Long-Term Carbon Sinks

The construction sector faces an urgent challenge: reducing CO_2 emissions while meeting growing demand for urban space. Timber construction offers significant potential, but its climate benefits are often limited by short life cycles and linear design approaches.

Innovation: SINK.CARBON addresses this challenge through a circular hybrid timber construction system, designed for multiple reuse and recycling cycles. By applying design-for-disassembly from the earliest design stage, the system enables buildings and components to be dismantled, adapted and reassembled with minimal material loss. Reversible connections, modular prefabricated elements and integrated life cycle assessment allow environmental performance and carbon storage to be optimised across several building generations. A full-scale demonstrator has already validated the feasibility of repeated assembly and disassembly under realistic conditions.

Impact Expected: Once deployed at scale, SINK.CARBON can significantly reduce life-cycle CO_2 emissions in the construction sector, extend material lifetimes and strengthen circular value chains. By combining technical feasibility, regulatory compatibility and scalable system design, the innovation supports climate-neutral construction and contributes to more resilient and sustainable cities.

UAR Upper Austrian Research GmbH

WOOD KPLUS

Wood K Plus is a leading European research organisation, developing applied solutions for wood-based materials, processes and circular bioeconomy innovation. Upper Austrian Research GmbH is the leading organisation for non-university research in Upper Austria. It promotes innovative solutions and provides access to excellent R&D capacities.

www.uar.at | www.wood-kplus.at

Synadel – Superior AI solutions for Security and Defence through synthetic data

In a world of evolving threats, speed saves lives. Global security systems— at airports, critical infrastructure, or defence environments— face a critical challenge: they rely on ATR algorithms (Automatic Target Recognition), which need vast labelled datasets to detect weapons and other dangerous items. Collecting onsite data is slow, costly, and raises privacy concerns, creating a dangerous gap against emerging security threats. As real data becomes a bottleneck across AI development, synthetic data is rapidly emerging as a crucial enabler of AI development.

Innovation: Synadel delivers a groundbreaking synthetic data platform software that merges physics-based simulation with generative AI to create ultra-realistic X-ray CT and mmWave images of objects and people. All images are perfectly labelled and device accurate, enabling fast, scalable and safe training of ATR algorithms. This enables rapid, cost-efficient training of ATR algorithms, reducing timelines from months to weeks - keeping security systems ahead.

Impact Expected: This innovation strengthens the core expertise and know-how in Europe on AI development, highly relevant for defence and security. It slashes dataset costs from millions to thousands, accelerates deployment timelines, improves detection accuracy while preserving privacy, and can help prevent attacks—ultimately saving lives. It eliminates resource-heavy field trials, cutting CO_2 emissions and advancing sustainable and sovereign European AI capabilities.

VTT

VTT is a visionary research and innovation partner for companies and society. It is one of Europe's leading research institutions. Through scientific and technological means, we turn large global challenges into sustainable growth for businesses and society.

www.vttresearch.com

RTOs INTERNATIONAL NETWORK **RIN**

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EARTO
IMPACT DELIVERED

AIST

Protein Arrays as a "Human Replacement"

The National Institute of Advanced Industrial Science and Technology (AIST) promotes the creation of start-ups to translate its long-accumulated life science and advanced measurement technologies into real-world applications. Established within this framework, and with a mission to provide a hopeful future for people suffering from autoimmune diseases, ProteoBridge aims to build new diagnostic and research foundations in collaboration with companies and researchers worldwide.

Innovation

ProteoBridge has established a proprietary technology that keeps the workflow—from protein array fabrication to sample assays—continuous in a non-dry state. This makes it possible to replicate antigen–antibody interactions in close to in vivo conditions. In addition, uniform expression levels have been achieved by using a wheat germ cell-free protein synthesis system, enabling highly sensitive detection of autoantibodies against low-abundance proteins that are difficult to detect using conventional methods.

Impact Delivered

In autoimmune diseases, diverse autoantibody responses reflect disease pathology, yet their comprehensive characterisation has been a challenge. HuPEX® enables comprehensive antibody profiling against more than 13,000 human proteins. A Cube® is a testing service for research targeting specific autoimmune diseases. Through these analytical platforms, ProteoBridge contributes to the elucidation of disease mechanisms and supports more appropriate diagnostic and treatment decisions.

About the RTO

AIST is one of the largest public research organisations in Japan. It strives to meet the needs of businesses through its own marketing company, AIST Solutions.

~A-Cube® Validation~Comparison with IVD ELISA Kits

Antibody	Agreement Rate	N
Anti-CENP-B Antibody	97.9%	96
Anti-Scl-70 Antibody	98.0%	98
Anti-ARS Antibody	96.2%	26
Anti-RNA Polymerase III Antibody	96.6%	89
Anti-Mitochondrial M2 Antibody	97.9%	48
Anti-U1-RNP Antibody	95.9%	104

~A-Cube® Line-up~

Panel Type	Num of Tg Antigens
Systemic Sclerosis (SSc) Antibody Detection Set	33
Systemic Sclerosis (SSc) Antibody Detection Set – Light Version	20
Dermatomyositis / Polymyositis (DM/PM) Antibody Detection Set	51
Dermatomyositis / Polymyositis (DM/PM) Antibody Detection Set – Light Version	39
Combined Set (SSc + DM/PM Antibody Detection)	67
Combined Set (SSc + DM/PM Antibody Detection) – Light Version	52
Sjögren's Syndrome Antibody Detection Set	25
Paraneoplastic Neurological Syndrome Antibody Detection Set	39
CTD-Associated Interstitial Lung Disease (CTD-ILD) Antibody Detection Set (launch scheduled in July)	36

AIST
www.aist.go.jp

AIST SOLUTIONS
www.aist-solutions.co.jp

ProteoBridge
proteo-bridge.co.jp

A*STAR

Detecting Mobility Decline Earlier with AI

As populations age, mobility is increasingly important to independence, recovery and quality of life. Small changes in how a person walks can reveal early signs of frailty, mobility decline or stroke recovery. Today, gait assessments are carried out manually in clinics, making them time-intensive, infrequent and dependent on individual judgement. A*STAR spin-off Carecam addresses this with 3DGait, a mobile application that uses AI to analyse how patients walk and generate objective measurements of their movement.

Innovation

3Dgait's innovation lies in making detailed gait analysis possible with an everyday device. Instead of relying on specialised multi-camera laboratory systems and subjective visual checks, the application uses AI to extract clinically meaningful movement data from a short video taken on an ordinary smartphone or tablet. This makes mobility assessment faster and more consistent, reducing reliance on time-intensive, clinic-based processes.

About the RTO

The Agency for Science, Technology and Research (A*STAR) is Singapore's lead public sector R&D agency. A*STAR spin-off, Carecam, develops AI-enabled health technologies to support mobility care.

Impact Delivered

Approved by Singapore's Health Sciences Authority and the U.S. FDA, 3DGait is already deployed in hospitals and polyclinics in Singapore for use in frailty screening and rehabilitation. It enables frequent, remote and consistent assessments, which help clinicians detect early signs of decline and track patient progress more effectively. This supports earlier intervention and more effective management of age-related conditions at scale.

ATRC

Making the Invisible Visible For Security Against Quantum Threats

We cannot secure what we cannot see. QuantumGate's Crypto Discovery Tool (CDT) is an Abu Dhabi-developed solution that gives organisations complete visibility of their cryptographic environment. It automates the discovery, inventory, and continuous monitoring of cryptographic assets across complex digital infrastructures, enabling a structured, agile transition to quantum-safe security. QuantumGate is working with the Cyber Security Council of the United Arab Emirates (UAE) to scale deployment of CDT and support one of the world's first coordinated national post-quantum migration plans.

Innovation

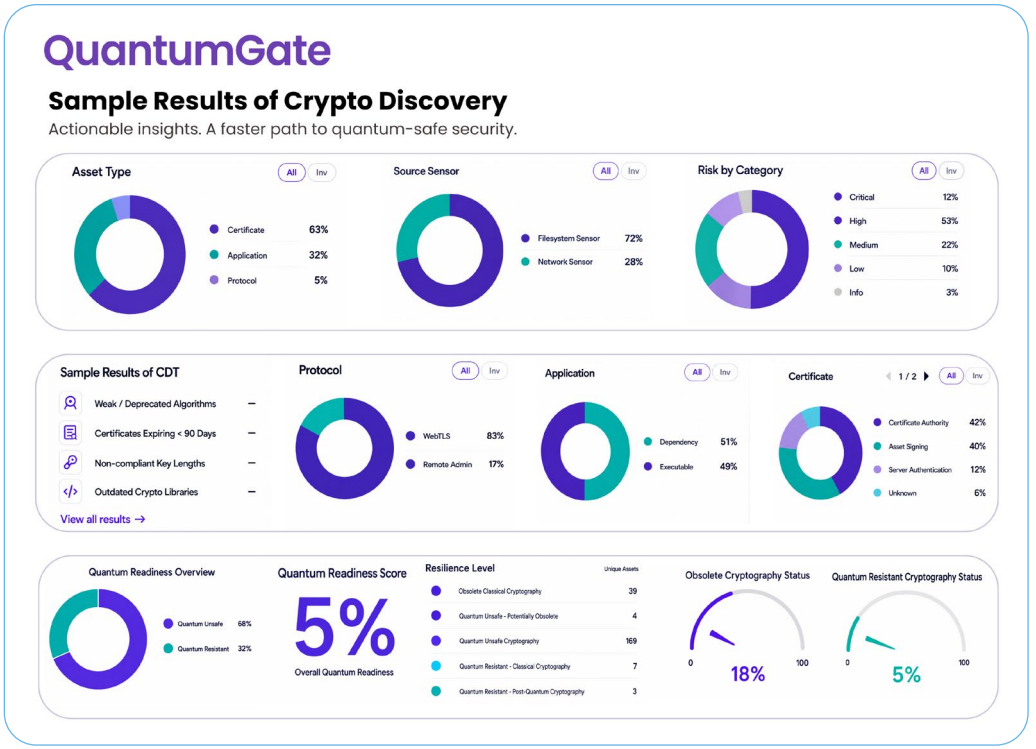
CDT deploys system, application, network, and cloud sensors to scan every layer of an enterprise environment, identifying cryptographic keys, certificates, algorithms, protocols, and libraries that are often invisible to conventional security tools. Unlike one-time assessments, CDT performs continuous monitoring, generating real-time risk scores and prioritised recommendations. Its compliance engine is modular, updating automatically as new post-quantum cryptography directives are issued, and can be customised to align with any nation's evolving encyrption standards as they develop. The tool integrates natively with existing Security Information and Event Management (SIEM) platforms and supports multi-cloud, hybrid and on-premises deployments.

Impact Delivered

CDT gives a unified, real-time view of the cryptographic landscape across all critical sectors for organisations and the UAE National Post-Quantum Cryptography Index. For enterprises, CDT replaces expensive manual audits with automated, continuous discovery, reducing time-to-visibility from months to days. As the first tool of its kind to be used in a national post-quantum migration program, CDT positions the UAE as one of the first countries globally to operationalise a coordinated, large-scale quantum-resilience strategy, protecting sensitive national data against both current threats and "harvest now, decrypt later" attacks already underway.

About the RTO

QuantumGate is an Abu Dhabi cybersecurity spin-off by VentureOne, the Advanced Technology Research Council's (ATRC) venture builder. QuantumGate offers enterprise solutions to protect data assets for a post-quantum world. QuantumGate's solutions are powered by proprietary cryptographic libraries developed by experts at ATRC's Technology Innovation Institute (TII).



ADVANCED TECHNOLOGY RESEARCH COUNCIL

www.atrc.gov.ae

QuantumGate

quantumgate.ae

CSIR

On-the-go ultrasound reduces rural stillbirths

Umbiflow is a point-of-care medical ultrasound system for pregnancy care. It monitors blood flow in the umbilical cord during pregnancy, enabling clinicians to identify fetuses at risk of complications resulting from poor placental blood flow and to intervene timeously to prevent stillbirth. It has recently been awarded the Conformité Européenne (CE) mark, confirming that it meets safety, health and environmental protection standards in the European Economic Area.

CSIR
Touching lives through innovation
www.csir.co.za

Innovation

Doppler ultrasound and sonar are not new technologies, yet their integration into this low-cost, easy-to-use device is innovative. The handheld device plugs into any computer or tablet's USB port for power and uses its own software to display blood flow in the umbilical cord as waveform graphs on the screen. Audible pulses of the blood flow can also be heard, similar to traditional sonar screenings. The tool is technically sophisticated, yet mobile, simple to power and easy to use by clinic staff.

Impact Delivered

Umbiflow has been extensively tested in multiple clinical trials with nearly 20 000 patients, including World Health Organisation-supported multi-country clinical trials and has demonstrated a reduction of up to 43% in stillbirth rates.
It is the only system of its kind with built-in clinical decision-making support, making it particularly suited for clinics in under-resourced areas where sophisticated diagnostic equipment and highly trained medical practitioners are unavailable.

About the RTO

The Council for Scientific and Industrial Research (CSIR) researches, develops, localises and diffuses technologies to accelerate socioeconomic prosperity in South Africa.

ELDORADO

Voice2Sign: AI-powered Sign Language Translation for Inclusive Communication

Access to information and effective communication remain major challenges for deaf and hard-of-hearing communities, impacting inclusion, autonomy, and access to services. Voice2Sign, being developed through a partnership between LENOVO and ELDORADO under Brazil's SUFRAMA IT Law, leverages AI to translate speech and text into sign language through a human-like digital avatar, enabling more accessible and inclusive communication experiences.

Innovation

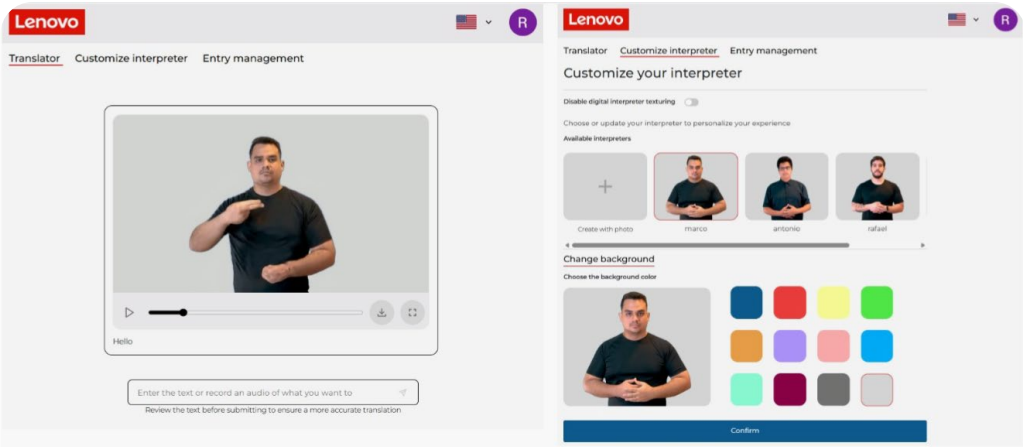
Voice2Sign introduces an AI-driven scalable platform that transforms audio and text into sign language beyond a single standard, initially supporting LIBRAS and ASL. The solution features a lifelike digital avatar with advanced realism and extensive personalisation capabilities, including facial customisation and future full-body adaptation. This combination enables culturally adaptive, expressive, and human-centred sign language interpretation for more natural and inclusive communication.

About the RTO

A reference in Research, Development and Innovation in Brazil, ELDORADO RTO has 27 years of experience in creating innovative technologies and solutions for companies and society.

Impact Delivered

Voice2Sign reduces communication barriers by delivering real-time and accessible sign language translation across digital platforms, services, and public information channels. By supporting multiple sign languages and highly customisable avatars, the solution promotes inclusion, representation, and greater user engagement. Its architecture enables widespread adoption across sectors such as education, customer service, media, and public services, contributing to global accessibility, social inclusion, and equitable access to information.



Lenovo dgb digiboard SUFRAMA

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INSPIRAÇÃO PELO NOVO
www.eldorado.org.br

ITRI

Prognosis Monitoring System (PMS)

In high-stakes industries such as semiconductors and energy, unexpected equipment failures can disrupt production, increase safety risks, and raise maintenance costs. Industry studies show that unplanned downtime causes annual losses exceeding US$220 billion worldwide. ITRI has develped the Prognosis Monitoring System (PMS), developed for resilient manufacturing, is an AI-powered predictive maintenance solution with real-time vibration monitoring, automated fault diagnosis, and remaining useful life prediction.

Innovation

PMS combines AI algorithms with expert diagnostic knowledge to deliver real-time prognostic insights with over 90% accuracy, outperforming conventional maintenance systems based on manual interpretation. The system reduces diagnostic time from 10 minutes to 1 second and supports assessment of more than 20 equipment fault types. Its plug-and-play architecture enables rapid deployment across industrial environments and accelerates industrial AI adoption.

Impact Delivered

Deployed in more than 1,500 systems worldwide, PMS helps manufacturers reduce downtime, improve reliability, and lower maintenance costs. In one semiconductor manufacturing case, PMS helped prevent production losses estimated at up to US$5 million. In renewable energy applications, PMS increased wind turbine uptime from 70% to 92%, contributing to energy efficiency, carbon emission reduction, and sustainable operations.

About the RTO

The Industrial Technology Research Institute (ITRI) is a world-leading applied technology research institute based in Taiwan. With more than 6,700 outstanding employees, it drives industrial development, creates economic value, and enhances social well-being through technology R&D.

NSTDA

Thailand Traffy Fondue: Empowering Citizens, Transforming Cities

Traffy Fondue is a smart city platform developed by Thailand's National Science and Technology Development Agency (NSTDA) that connects citizens with local authorities through an accessible online interface. Residents can report urban issues such as damaged infrastructure, waste, flooding, and public safety concerns. The platform improves transparency, speeds up issue resolution, and helps agencies use data to identify recurring problems, allocate resources efficiently, and build more livable cities.

Innovation

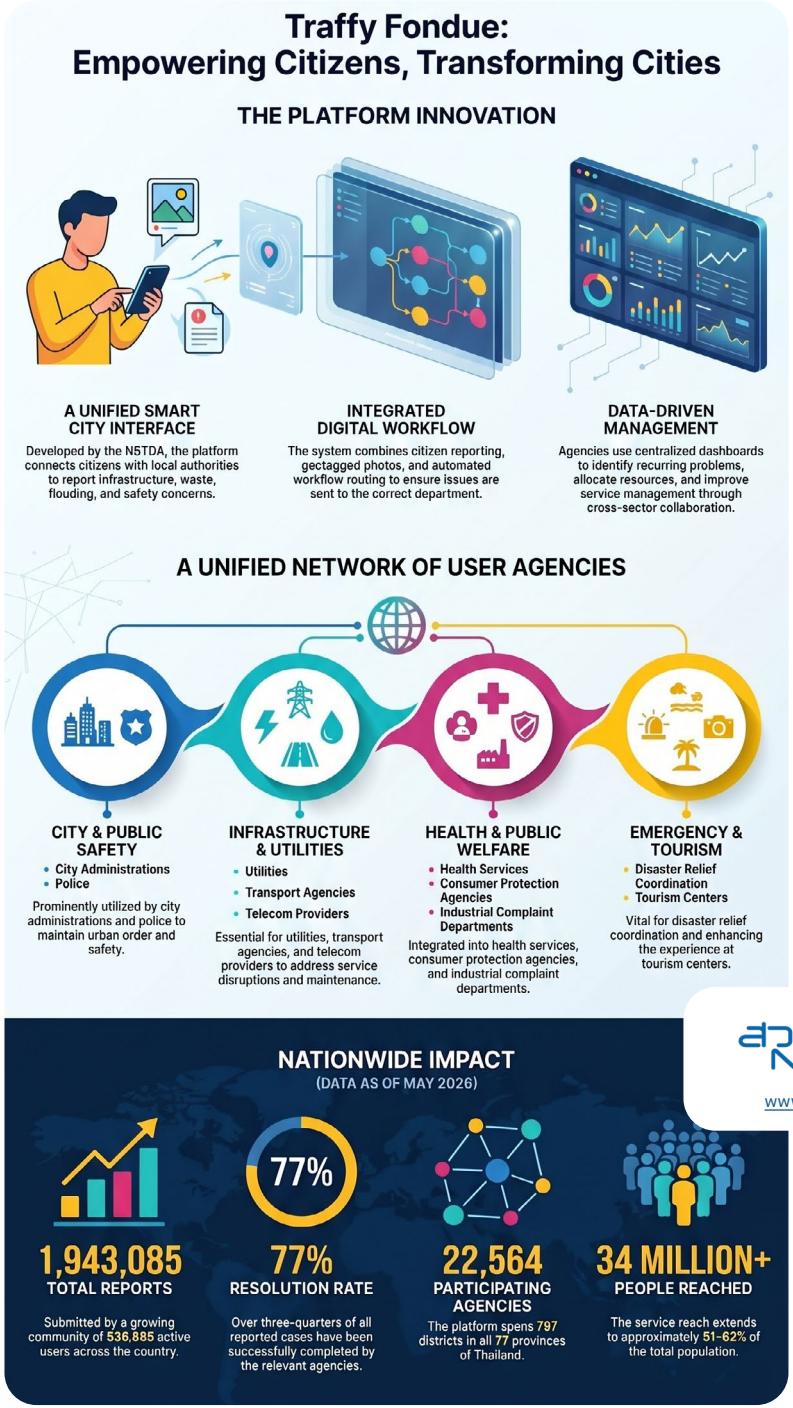
The platform combines citizen reporting, geo-tagged photos, workflow routing, dashboards, and cross-agency coordination in one system. Used by Government agencies, the Ministry of Industry, police, Department of Disease Control, tourism centres, telecom, consumer protection, and disaster relief, it enables agencies to forward cases and collaborate across sectors to improve service management, planning, and resource allocation.

About the RTO

NSTDA develops mission-driven digital innovations that transform research into scalable technologies connecting citizens with government agencies to solve urban challenges and improve quality of life.

Impact Delivered

As of 6 May 2026, Traffy Fondue recorded 1,943,085 reports from 836,685 users, with 77% of cases completed. The platform is being used by 22,564 agencies across 797 districts in all 77 provinces of Thailand, extending its service reach to more than 34 million people, or around 51–62% of the population. These results highlight its nationwide impact in improving responsiveness, transparency, and public service delivery.



www.nstda.or.th

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