



KETGATE

Enhancing SME competitiveness through
improved access to Key Enabling
Technologies

WWW.INTERREG-CENTRAL.EU/CONTENT.NODE/KETGATE.HTML



This transnational cooperation project is funded by **Interreg CENTRAL EUROPE** and aims to improve skills and entrepreneurial competences for economic and social innovation.

FOREWORD



DEAR READERS,

Undoubtedly, COVID-19 pandemic has affected the lives of every single individual on this planet and has severely influence a great number of business around the world. Flash estimates for the European economy released by Eurostat indicates that GDP in the EU sunk by 11,7 percent and unemployment increased by 2.6 percent in the EU in the second quarter of 2020, when compared to last year. These were by far the sharpest declines observed since time series started in 1995 .

For most companies, the natural impulse at this time would be to turn into crisis management mode. This means, to minimise somehow revenues loses and to cut down 'unnecessary' costs. Unfortunately, innovation is usually catalogued as one of this 'unnecessary' cost.

However, we believe that, particularly in crisis time urgent actions should also include:

- a) Identifying new opportunities created by shifting customer needs,
- b) Connecting with potential cooperation partners and
- c) Developing new products and services to meet these new needs with the right partners

WHY KETGATE?

With our new installed network KETGATE, we can help you to improve your innovation capacity and bring your ideas quickly to the market.

With our personalized services in your national language, we support you to evaluate the innovation capacity of your company and can assist you identifying new opportunities created by the new crisis landscape.

We offer you quick and easy access to a network of dozens of experts in the areas of key enabling technologies to start right away developing your innovation projects. These experts at research and development organisations (RTOs) around Central Europe, will provide you with prompt support to test and prototype your ideas to turn them into valuable and useful products and services to meet your customers needs.

Finally, KETGATE will provide your information on funding schemes to finance these innovation projects.

Take a look at our development in the last three years and how we have already supported small and medium enterprises successfully with our work.

So, do not hesitate more and contact the regional KETGATE Point closer to you and start innovating now!

It will be a pleasure to support you!

Kind regards,

Jennifer Bilbao

¹ Eurostat 2020. GDP and employment flash estimates for the second quarter of 2020: GDP down by 12.1% and employment down by 2.8% in the euro area. News Release. <https://ec.europa.eu/eurostat/documents/2995521/10545332/2-14082020-AP-EN.pdf/7f30c3cf-b2c9-98ad-3451-17fed0230b57>
Access date: 21.08.2020



FROM KETGATE PROJECT TO KETGATE NETWORK

OUR MISSION



To strengthen the **REGIONAL INNOVATION CAPACITY IN CENTRAL EUROPE** through a **TRANSNATIONAL NETWORK**, where **COMPANIES HAVE ACCESS TO KETS** independent on their location and language.

OUR VISION



Become the most widespread innovation network in Central Europe connecting small and medium-sized enterprises with research and technology organisations in the areas of key enabling technologies.

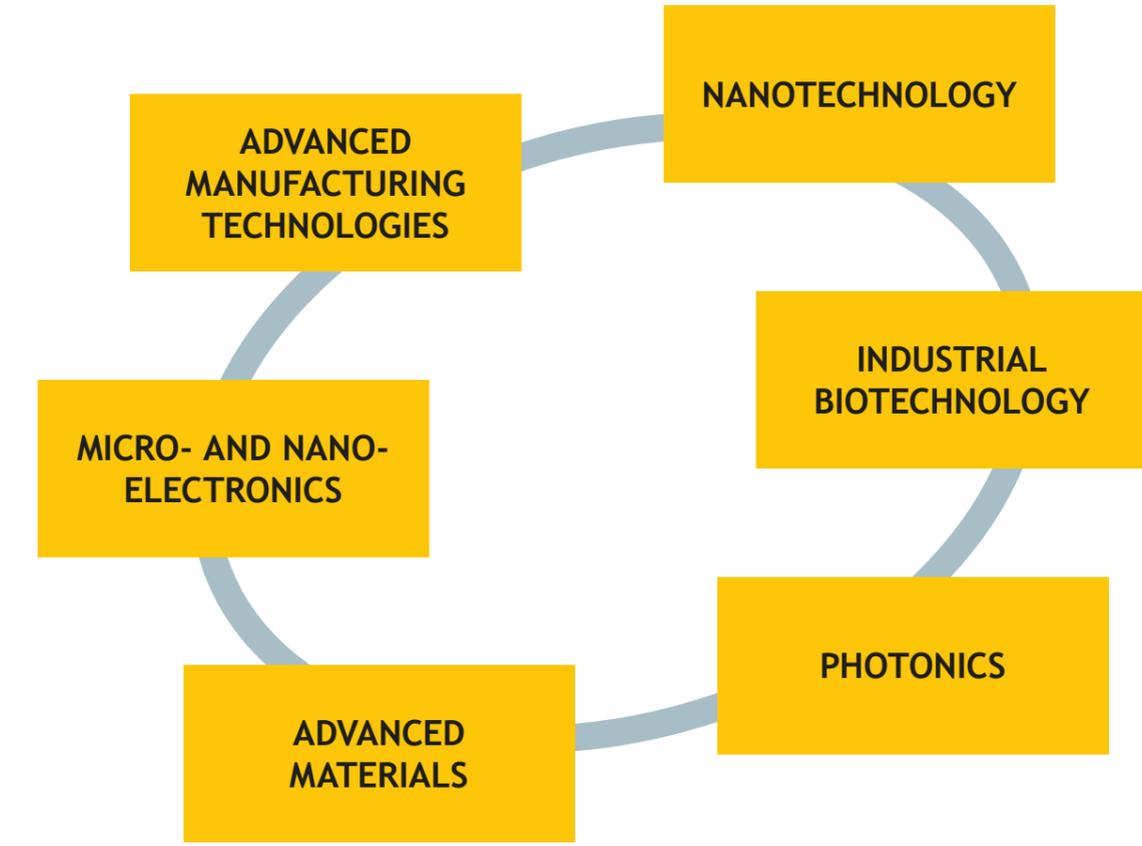
PROJECT OBJECTIVE



To install and test a transnational network of KETGATE Points across Central Europe to connect SME to RTO in the area of key enabling technologies.

- SME**
Small and medium enterprises
- RTO**
Research and technology organisations
- KET**
Key enabling technologies

KEY ENABLING TECHNOLOGIES KETS



OUTPUTS

Number of KETGATE Points (incl. followers):	10
Number of RTOs (incl. followers):	22
Number of SMEs contacted:	700+
Number of service requests:	45
Number of pilot projects:	8
Number of SME/RTO service contracts:	12

WHAT WILL BE NEXT?

KETGATE consists at the moment of 10 KETGATE Points (August 2020) and 22 RTOs across Central Europe.

KETGATE is ready to continue bringing opportunities for transnational collaborations between SME and RTO. We expect KETGATE to continue expanding in the following years to support industrial innovation across Central Europe.

TIMELINE OF THE PROJECT

07/2017

Kick-off of the project 07/2017

11/2017 – 01/2018

Eight Regional Stakeholder Workshops. Activation of the regional ecosystems, innovation ecosystem profiles were prepared.



01/2018

Finding the needs of the SME = small and medium-sized companies. Hundreds of SME across Central Europe answered a survey about their KET service needs.

04/2018

First proposal of the working mode for the transnational KETGATE network was made.



05 – 08/2018

Attracting research and technology institutions to join the network.

Eight workshops for RTOs, study visit among RTOs.



09/2018

Toolbox for KETGATE Points and RTO were prepared.

10/2018

Eight KETGATE Points were installed.

Technology service requests and innovation audits are one of the key features that fuel KETGATE Network.

01/2019

Matchmaking event in Italy.

59 participants from 11 countries participated in more than 120 meetings, 26 expressions of interests were received.



04/2019 – 01/2020

Pilot project between SME and RTOs took place.

KETGATE Points visited SMEs, explained KETGATE project, fill out the required templates. RTO and SME agreed on pilot projects. RTO performs pilot projects and tested the required templates.



02/2020

KETGATE toolbox were revised and validated. Simplification, some tools were cancelled.



01 – 07/2020

Eight roundtables with regional policy and relevant stakeholders in each country.

Explain the importance of KETGATE and implement KETGATE approach to local plans.



05/2020

Digital brokerage event and Kick-off of the KETGATE Network.

SMEs and Researchers met online - proving that even in the difficult times of COVID19 it is still possible to boost innovation opportunities. Matchmaking activity gathered more than 300 participants from 23 countries.

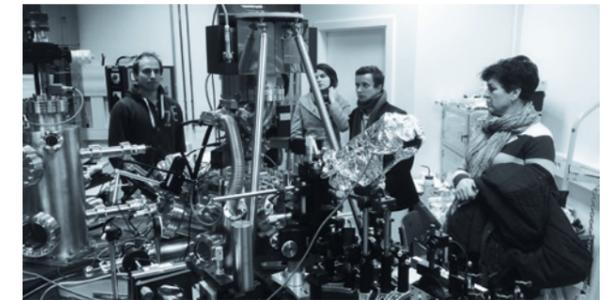
From 07/2020

Expansion of the KETGATE Network.

2 KETGATE Points and 14 RTOs joined the KETGATE Network.

08/2020

Action plan for a Central Europe-wide smart KET access and service network- and beyond was set up



KETGATE team worked together: Meetings in Ljubljana, Budapest/Miskolc, Venice, Stuttgart, Prague (pictures) and also online.



KETGATE'S OPERATION MODE

THE BEGINNING

KETGATE project began listening to local stakeholders. All partners organised meetings with representatives of SMEs, universities, clusters, business support organisations, research and technology centres and experts on key enabling technologies topics.

The stakeholders explained how research and technology centres help them and the costs of innovation. They considered how Business Support Organisations could help SMEs in their contacts with Research and Technology Organisations to develop innovation projects exploiting KETs.

The discussions made some common issues emerge. The main problem was the significant gap that divides small companies from Research and Technology Organizations. On the one hand, European SMEs want to innovate, but they find it difficult, as they do not know how to identify the best research organisations for them. They do not know who can help them if they want to develop a project with a research centre.

Moreover, universities and Research and Technology Organisations do not know how to approach small and medium companies. Besides, there is a fundamental lack of marketing and promotion actions from research organisations, to be wider known.

On the other hand, Business Support organisations can make use of a network of connections with corresponding Business Support Organisations, Universities and Research and Technology Organisations in their countries and abroad. The opportunities offered by their international relations are very often unexploited.

In general, all stakeholders expressed that there should be more information on the research and technology offer and the innovation needs, to establish domestic and

trans-regional innovation exchange and developments.

After listening to stakeholders, the project looked at the innovation environment: every partner analysed its Regional KET innovation ecosystem. It allowed collecting qualitative and quantitative data by desk research or through personal contacts.

In this way, they could have a unique analysis and comparable results.

As the next step, partners approached their target directly. They did a survey to assess SMEs needs and their previous experiences with applied research support centres. Each partner identified a target group of 50 local SMEs.

The data collected were later analysed by each partner, that contained details on:

- status of KETs awareness and its usage in SMEs;
- visibility of Research and Technology Organizations acting as KET service providers;
- information on cooperation experiences, barriers and needs of SMEs

To complete the picture, partners made a study of the existing good practices from relevant European initiatives, to analyse and define the proper working mode to be applied in the future KETGATE Point and, at the same time, to have insights on the management and coordination of the KETGATE network.

The analysis identified four success cases:

“Enterprise Europe Network”: a network of almost 600 organisations throughout the European Union and beyond, dedicated to helping small- and medium-sized enterprises to make the most of the business opportunities in the EU.

“ACTPHAST”: (ACceleraTing PHotonics innovATion for SME's: a one STop-shop-incubator) a “one-stopshop rapid prototyping incubator” for supporting photonics innovation by European companies, which is financially supported by the European Commission under Horizon2020.

“RespiceSME”: a project which aims to reinforce the innovative capacity of Europe’s photonics Small and Medium Enterprises (SMEs), clusters and national platforms by stimulating targeted collaborations in and beyond photonics.

“EIT”: The European Institute of Innovation and Technology, an EU initiative to promote innovation and entrepreneurship in Europe through six Innovation Communities with the focus on different societal challenges.

After these analyses, KETGATE produced a structured strategy that could support the network members to work for a common goal with a clear and shared vision.

THE KETGATE STRATEGY

The strategy designed a network of KETGATE Points which work as dedicated regional access points for SMEs and installed at local Business Support Organisations & Research Technology Organisations across Central Europe. They are meant to assess the service needs on KETs of SMEs and to guide them toward the most competent and suitable Research Technology Organisation service partner for the SME needs. The network can comprise new members, organisations that will join KETGATE as new KETGATE Points as Business Support Organisation or as Research Technology Organisation via an accreditation procedure, managed by a KETGATE Board.

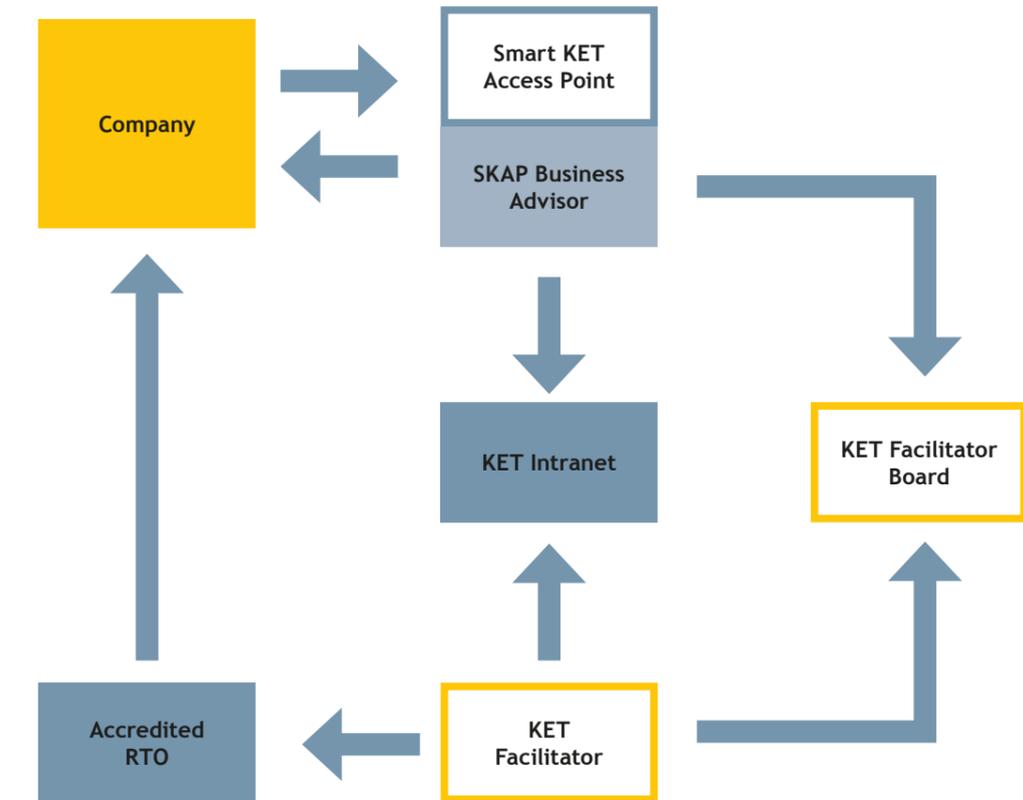
Each KETGATE Point hosts skilled and competent personnel. In particular, in every KETGATE Point, a central role is assigned to the Business Advisor, who is in charge of guiding the SME in the whole process. At the same time, in all those installed inside Research Technology Organisations, there is a KET Facilitator, which serves as counterpart for the Business Advisor at the KETGATE Point. Several services provided by the KETGATE Point can be offered directly by the Business Advisor. At the same time, those that need a research and technology centre have to follow standard procedures to guarantee a quick and effective answer to the clients' needs.

The whole assistance process can be divided into six main steps:

1. needs identification and client segmentation,
2. needs reporting,
3. tender procedure and offers selection
4. contract negotiation,
5. development of the project
6. process evaluation and customer satisfaction.

The whole working mode was tested during a pilot phase. Then, all KETGATE Points received a guide with the standards to deliver the services, such as tools, good practices and templates.. In this phase, they were also trained with webinars to improve the working mode, to the evaluation of the companies' innovation capacity, and to facilitate the cooperation with research and technology organisations.

Of course, every KETGATE Point had information on all other KETGATE Points to provide specific information about them, their potential clients and to facilitate the mutual contact and cooperation.





KETGATE PARTNERS

AUSTRIA



Joanneum Research KETGATE Point, RTO

MATERIALS - Institute for Surface Technologies and Photonics provides access to the latest technologies required for implementing innovative products and services. The institute has long-standing experience in managing a wide range of research cooperation's, thus enabling the clients to successfully participate in national and international funded research projects.



Research Center for Non Destructive Testing GmbH RTO

Research Center for Non Destructive Testing GmbH The Research Center for Non Destructive Testing GmbH (RECENDT) provides a range of services which incorporates the whole R&D process chain and stretches from application-oriented fundamental research to the development of state-of-the-art technology for industrial applications. RECENDT implements customized, high-tech solutions in the fields of material characterization and non-destructive materials testing. The interdisciplinary team consists of physicists, chemists, mechatronics engineers, and development engineers with state-of-the-art equipment at their disposal which enables them to contribute to the success of the business in various branches. Role: KETGATE RTO



V-Research GmbH RTO

V-Research is a non-university center of excellence for applied research, development and innovation in the technological-industrial area. We deal with complex business tasks as well as contribute to social development on a non-profit basis. Together with our customers, we achieve set goals in a solution-oriented and effective manner. V-Research is characterized by the use of the state-of-the-art methods from the areas of data science and computer-aided optimization, as well as a sophisticated methodical approach in the areas of digital engineering, photonics and Tribo-design.

CROATIA



Faculty of Electrical Engineering, Computer Science and Information Technology Osijek RTO

The Faculty of Electrical Engineering, Computer Science and Information Technology is the regional leader in the field of electrical engineering, computer science and information and communications technologies. The Faculty is constantly advancing its competitiveness in science and research, professional projects and students' education, in close cooperation with the economy and local community.



Institute of Physics RTO

Institute of Physics is a public institute whose main activities constitute scientific research in theoretical and experimental physics. Today's activities encompass various branches of physics, such as solid state physics, surface physics, statistical physics, biological physics, atomic and molecular physics, optical physics and plasma physics. Besides Institute's permanent goal to acquire as high level of research quality as possible, its mission includes also the efforts to ensure that the research enables the technology transfer to the industry standards through the foundation of spin-off companies.



TERA Tehnopolis Ltd. KETGATE Point

TERA Tehnopolis is a joint-venture of the J.J Strossmayer University of Osijek, the City of Osijek and the Osijek-Baranja County. The activities focus on the development of knowledge-based economy by implementing significantly improved technologies (products, services and processes) and the commercialization of publicly-funded research conducted by the J.J Strossmayer University, as well as the intellectual property protection. Every year, more than 500 clients contact TERA for consultancy services.

CZECHIA



Central Bohemian Innovation Center KETGATE Point

As a publicly funded infrastructure, SIC will provide services to breed entrepreneurship, in particular knowledge-based, i.e. with high added value, to foster collaboration between research organizations and businesses and between research organizations and the public sector, and to support the development of municipalities.



National Cluster Association KETGATE Point

The National Cluster Association (NCA) connect cluster organizations, defend their needs and develop cluster policy in the Czech Republic. NCA is a non-governmental non-profit organization that brings together entities and individuals with the goal of coordinated and sustainable development of cluster initiatives and cluster policy development in the Czech Republic based on concentration of knowledge, experience and expertise to strengthen the Czech competitiveness.



Tomas Bata University in Zlin RTO

A specialized department, the Technology Transfer Centre (TTC), provides services associated with the protection of industrial rights over R&D results on behalf of TBU and implements the necessary steps leading to

the commercialization of such results. Moreover, the TTC represents an important link between TBU and the industrial practice thanks to patent services offered by the TTC not only as an internal service for TBU but also for industrial entities - external applicants.

GERMANY



Hahn-Schickard RTO

As a non-profit association with a total of 200 employees in southwest Germany at our sites in Stuttgart, Villingen-Schwenningen, and Freiburg, we carry out applied research and development in the areas of microsystems engineering, micro assembly technology, microanalytical systems, and information technology. We are dedicated to turning product visions into innovative products - with you and for you.



Steinbeis-Europa-Zentrum KETGATE Point

Steinbeis-Europa-Zentrum (SEZ) is an independent economic entity within the Steinbeis Foundation. It was founded in March 1990 as the operational unit of the Commissioner for Europe of Baden-Württemberg's Minister of Economics. SEZ's core activity is to promote European RTD programmes and to support cross-border technology transfer as well as Small and Medium-sized Enterprises and Universities of Applied Sciences.

HUNGARY



Bay Zoltán Nonprofit Ltd. KETGATE Point, RTO

Bay Zoltán Nonprofit Ltd. for Applied Research aims to contribute to the competitiveness and efficiency of Hungarian companies by providing services in innovation and technology transfer in cooperation with Hungarian and foreign partner institutions. We offer our customers - currently more than 200 companies - complex scientific and technological solutions in several areas of expertise, devised in a way to enhance their competitiveness.



Centre for Energy Research, Institute of Technical Physics and Materials Science RTO

Interdisciplinary research on complex functional materials and nanometer-scale structures, exploration of physical, chemical, and biological principles, their exploitation in integrated micro- and nanosystems, and in the development of characterization techniques.



University of Miskolc RTO

The Technology- and Knowledge Transfer Directorate of the University of Miskolc collaborate with the biggest multinational companies and also the family owned SMEs. The focus of these cooperation could be product or process development and production development. We have special, unique equipments like XStress Robot system, YXLON Computer Tomograph and The ultimate multipurpose Xray diffractometer as well.



ITALY



Friuli Innovazione Research and Technology Transfer Centre

KETGATE Point

Friuli Innovazione Research and Technology Transfer Centre was set up with the aim of fostering collaboration between the University and the local economic system. We assist young entrepreneurs, companies and researchers in the development of business ideas, innovative and high-tech. Today our services are oriented towards some of the main strategic sectors for the economy and the regional research system (ICT, Additive Manufacturing, Metallurgy and Surface and Advanced Materials Technology, Energy and the Environment, Biotechnologies). but we also look abroad, more and more, through participation in European projects and other initiatives that favor the internationalization of companies.



SEAMTHESIS Srl

RTO

Private R&D and Research Body specialised in Materials Science and Engineering, Metallurgy and non-metallic materials, arterial modeling and process simulation, production technologies and transformation to final products, Powder Metallurgy and Additive Manufacturing, advanced materials characterisation, failure analysis, product qualification and performance assessment, high formation, technology transfer to SMEs and Industry, financed projects at regional, national and EU level.



UniSMART - Fondazione Università degli Studi di Padova

RTO

UniSMART is the foundation of the University of Padua deputed to technology transfer and postgraduate education. UniSMART valorizes IP, arranges and manages research projects, innovation consulting, Collaborative EU Projects, activities involving students and Ph.D. candidates, Masters, long-life learning courses and corporate education.



Veneto Innovazione spa

KETGATE Point

Veneto Innovazione Spa is the in-house company of the Veneto regional Government. Set up in September 1988 with the aim to promote and develop applied research and innovation in the regional area, it is particularly focused on SMEs which intend to pursue high technological standards, environmental improvement and human resource qualification.

POLAND



Central Mining Institute

RTO

The basic areas of GIG activities constitute: mining engineering, environmental engineering, problems relating to quality, education and training. GIG is one of the most acknowledged partners in such areas

of activities as waste management, raw materials recycling, energy audits as well as modernization of energy economy of municipalities and enterprises, optimization of water supply and sewage disposal, environmental monitoring, Cleaner Production programme, programmes of sustainable development of municipalities (rural districts), and regions. Institute is a leading research organization working in clean-coal technology fields such as coal-bed methane, underground coal gasification, carbon capture and storage, shale gas.



Centre for Advanced Manufacturing Technologies, Wrocław University of Science and Technology

RTO

Centre of Advanced Manufacturing Technologies (located at Wrocław University of Science and Technology) is focused on designing, development and application of laser, additive and hybrid technologies. Our core competences include the use of Additive Manufacturing Technologies for the production of individualized components and fully functional parts with complex internal and external structures, including components use in challenging operating conditions (thermal, mechanical and corrosive environment).



Lukasiewicz Research Network - Institute of Non-Ferrous Metals

RTO

Institute of Non-Ferrous Metals (IMN) is a research centre of the Polish non-ferrous industry. Complex activities cover all stages of metallic materials production: from ore treatment to technologies for production of modern product meeting all environmental standards.



Professor Zbigniew Religa Foundation of Cardiac Surgery Development

RTO

The Foundation's research and scientific activity is of multidisciplinary character and encompasses, in particular, aspects associated with biomedical engineering, heart prostheses construction, medical robotics and tissue engineering. The activity is conducted by the internal Heart Prostheses Institute including the Artificial Heart Laboratory, Biocybernetics Laboratory and Bioengineering Laboratory.



University of Silesia in Katowice

RTO

The University of Silesia in Katowice gives its students a unique possibility to develop their interests, fulfil their passions and gain practical skills necessary in constantly changing job market. Our community consists also of more than 2,000 teachers and researchers. In order to enhance the cooperation to its fullest, the University of Silesia has established a highly specialized unit, which main focus is facilitating the network of collaboration for science, industry and local government. Their purpose is to assist the academics: organize trainings in the commercialisation of scientific research results, support the development of potential and improvement of qualifications in the area of university-industry collaboration.



Upper Silesian Agency for Entrepreneurship and Development Ltd.

KETGATE Point

Upper Silesian Agency For Entrepreneurship And Development Ltd. Upper Silesian Agency for Entrepreneurship and Development Ltd. (GAPR) was established in 1999. The mission of GAPR is to support development of the region's economy and stimulate development of entrepreneurship, in particular of the SME sector, by providing modern support services, promotion of innovative solutions and investments. Role: KETGATE point

SLOVENIA



Jožef Stefan Institute

KETGATE Point, RTO

The Jožef Stefan Institute is the leading Slovenian research organisation. It is responsible for a broad spectrum of basic and applied research in the fields of natural sciences and technology. The staff of around 960 specialize in research in physics, chemistry and biochemistry, electronics and information science, nuclear technology, energy utilization and environmental science.



Slovenian National Building and Civil Engineering Institute

RTO

ZAG (Slovenian National Building and Civil Engineering Institute) is a public, non-profit, state owned body. It is leading Slovenian institute in the field of building and civil engineering and is an internationally recognized research organization.



University of Primorska

RTO

The University of Primorska is successfully implementing its two core activities: research and education. The knowledge for the environment that the university is directly offering to companies, public institutes and other organisations is a quality upgrade of basic research.



SUCCESS STORIES ON COLLABORATION PILOTS

EVALUATION OF ANTIMICROBIAL ACTIVITY OF NANOFIBER BASED STRUCTURES

Company name: PARDAM, s. r. o. Czech Republic, <http://www.pardam.cz/>

RTO name: Jožef Stefan Institute, Advanced Materials Department, Slovenia

PARDAM, s. r. o. focuses on production of nanofibrous materials intended for special industrial applications. The most significant type of material are inorganic nanofibers whose application in battery separators of new innovative safe type of batteries is already being introduced to the market. PARDAM, s. r. o. has developed few products based on nanofibers with potential antimicrobial effect for various applications. Antimicrobial effect of these products had to be evaluated and clearly proved.

Between July and October 2019, Jožef Stefan Institute performed analysis for the PARDAM, s. r. o. Antimicrobial effect of nanofiber based products has been evaluated according to microbiological standards. Evaluated were antimicrobial properties of different types of material in the direct contact and in the suspension with relevant bacterial cultures. The results supported PARDAM, s. r. o. in further development of their products.

“We were quite surprised how easily, fast and effective was the cooperation abroad. This measurement can move us forward to real product with real application.”



DESICCANT FROM SCRAP MATERIALS - COMPARATIVE STUDY

Company name: MaterialScan Ltd., Italy, www.materialscan.it/en/home-2/

RTO name: Bay Zoltán Nonprofit Ltd., Hungary

MaterialScan Ltd. is an innovative start-up and its team is composed of five material engineers who gained their expertise in the field of nanotechnology and characterization of polymer and composite materials. The company has developed a technology for the manufacturing of materials suitable for absorbing moisture in confined spaces without air exchange and exclusively composed of a recycled fraction (50%) and natural additives (50%).

Since the company's target is mainly focused on the technology development rather than material manufacturing, the main needs arise from market. The main goal of the project is to investigate the desiccant producing technology, developed by MaterialScan Ltd., from the market's point of view.

The results of examination were summarized in a study which focuses on research on the existing technologies and also searching for novel routes for each material, existing desiccant products, the types of materials that are used, the requirements, the cost efficiency and other specifications. The gathered data was crucial used to compare the company's technology to the common desiccants and determine the marketability and eco-friendliness of the material.

The Bay Zoltán Research Institute provided immeasurable assistance in the preparation of the study. Our company does not have the free human resources capacity or expertise to answer this professional question. We are grateful for the effective and fruitful cooperation.





HYBRID ADDITIVE MANUFACTURING AND COATING OF THE METAL STRUCTURES

Company name: Balmar d.o.o., Slovenia, www.balmar.si/

RTO 1 name: Jožef Stefan Institute, Advanced Materials Department, Slovenia

RTO 2 name: JOANNEUM RESEARCH, Austria

Company BALMAR d.o.o. is a privately owned Small and medium-sized enterprise (SME), established in 2008 and located in Celje, Slovenia. Major scope of company activities is focused into aviation sector, space sector and additive manufacturing.

The company has developed a Hybrid Additive Manufacturing Approach to optimize the Additive Manufacturing (AM). The AM process is being used in industry when classical existent manufacturing technologies cannot be used to produce bigger parts with some complex geometries built out of a special material (e.g. super alloys, titanium alloys, etc.)

Major disadvantage of the AM process is the manufacturing speed and relatively high manufacturing costs. When such principle is being used, new intermetallic boundary layers between parts build by one and another AM Technology appears. Such boundary layer contains smaller-finer and bigger-rougher crystal structures which can consequently influence on the mechanical and materials properties of the built part.

The newly developed Hybrid Additive Manufacturing Approach is planned to be applied on aerospace parts, where a protection is needed. Hard coatings are a suitable way of providing mechanical protection.

In this project JOANNEUM RESEARCH - MATERIALS provided valuable expertise in Powder Bed Fusion (PBF) for further tasks performed by Balmar d.o.o., which applied the Hybrid Additive Manufacturing Approach. After the samples were prepared Jožef Stefan Institute deposited PVD coatings as well as investigated the surface properties with microscopy and standard tests.



CUTTING TOOLS - LIFETIME INCREASE

Company name: Phoenix d.o.o., Croatia, www.phoenix-opruge.com

RTO name: Bay Zoltán Nonprofit Ltd., Hungary

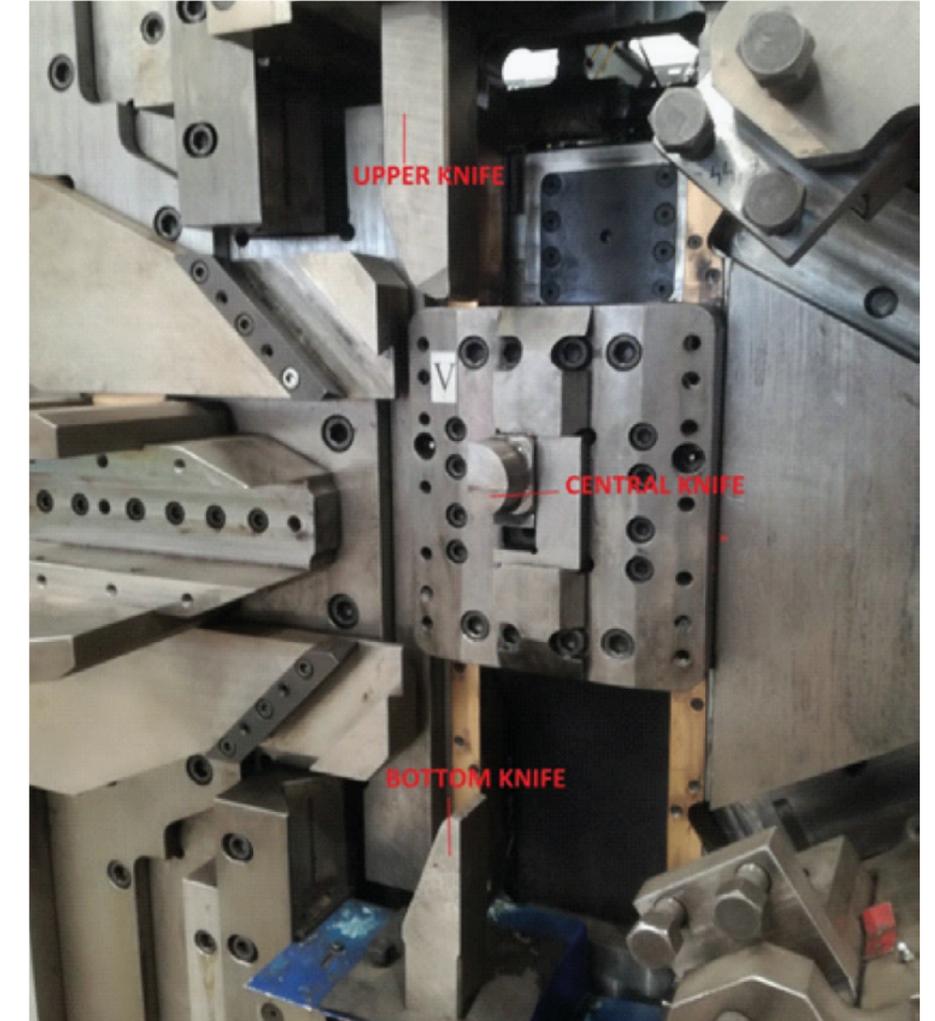
Phoenix d.o.o. with over 50 employees in total has become global established producer of spring making machinery.

The main challenge is to improve mechanical properties of machine tooling (toughness, wear resistance). Phoenix Ltd. produces spiral spring making machine of COM-20. Main critical elements of this machine are rollers, central knives, upper and lower knives produced by Phoenix as well. Due to the high loading of these parts damages of them are very serious. Great portion of knives and rollers material is broken away after a quite short working period, by this way the life time of them less than expected.

The main goal of the project is to investigate the damage of cutting tools used in spiral spring production, and work out proposal to improve tool lifetime. The results of this examination and proposal were summarized in a report that focuses on the existing tool materials and the damage process of tools first, then on searching for novel tool materials or additional surface and/or bulk treatment of tools: the types of advanced tool materials, the requirements, the cost efficiency and other specifications.

Investigations give a good possibility to compare the properties of different knives' materials, and by this way to determine the possible proposals improving knives' life time.

"Thank you for your thorough and detailed work. We will continue to work with you in the future, because your attitude and expertise will guarantee the success of our work."





DEVELOPING OF STEEL PUNCHING TOOLS

Company name: Technometall Kft, Hungary

RTO 1 name: Bay Zoltán Nonprofit Ltd., Hungary

RTO 2 name: JOANNEUM RESEARCH, Austria

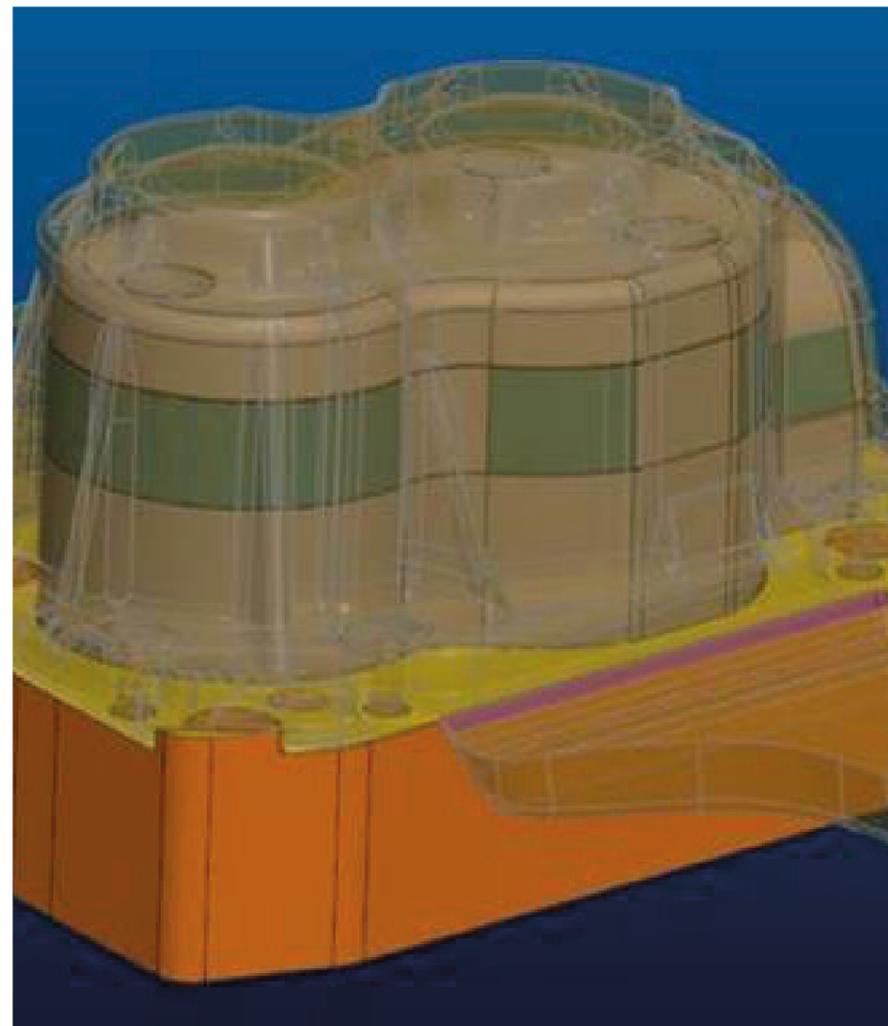
The main profile of Technometall Kft. in Sárospatak is machine tool manufacturing, design and construction. In addition to manufacturing complete cold forming tools, they also specialize in the production of tool elements or other high-precision machined parts.

The intention of the company was to make some parts of steel punching tools easier, faster and more cost-effective than by the means of the classic process. With the help of the business consultant of the Bay Zoltán Research Institute, the needs of the company were precisely identified, and then a study on the feasibility of the idea was carried out with the involvement of the Austrian Joanneum Research Institute.

Different material tests were planned and carried out on the original material and the new prepared tool made by additive manufacturing to compare the mechanical properties of these two materials. Also a geometry test on the printed part was performed to inspect the accuracy of printing job. Material tests on the molded part and printed part have been performed. In conclusion, can be stated the managing steel have better material properties in several cases.

Based on test results, the applicability of the new technology for the producing of this tool can be decided.

<https://www.youtube.com/watch?v=DfFMw-PnJ34>



SUCCESS STORIES ON COLLABORATION PILOTS - VIDEOS

[HTTPS://WWW.YOUTUBE.COM/PLAYLIST?LIST=PLPNU5DAOJAJSCJWBP-UC8JNQHMdQMdrsn](https://www.youtube.com/playlist?list=PLPNU5DAOJAJSCJWBP-UC8JNQHMdQMdrsn)

YouTube CZ Search

KETGATE Project Success Stories
7 videos • 54 views • Last updated on 18 Aug 2020

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Interreg KETGATE
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- 2 **SME from Hungary**
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- 3 **Company Pardam, Czech Republic**
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2:22
- 4 **Company MaterialScan, Italy**
Interreg KETGATE
1:52



RECOMMENDATIONS

During the KETGATE project duration the network expanded from initial 8 KETGATE points and 3 RTOs to 10 KETGATE Points and 20 RTOs from Central Europe. This growth indicates interest for providing KET services to SMEs and good trend for expanding KETGATE network mid-to-long-term with the target of a Central Europe wide KET access and service network. In case of successful implementation of the network, expansion to other regions of Europe is foreseen.

In order to maintain the network, it is important to strengthen it. Within the project, this was done by implementing validated tools, developing business models and providing information about access to funding for RTO-SME cooperation, and very important - interest of SMEs, which expressed KET service requests. By attracting the interest of SMEs, numerous service requests were shared on the KETGATE platform during project duration and more are expected to be shared in the future.

In order to attract SMEs, it is important to promote the KET services, technologies, research infrastructure and latest achievements of RTOs. **It is also important to organise brokerage events and visit SMEs or contact them via phone and email in order to establish personal connection.** One important tool to better understand and support R&D activities for SMEs is to perform innovation audits. In this way, SMEs can receive complete support for their processes, which increases their competitiveness on the market. Organising brokerage events is an important tool for reaching SMEs and establishing connections, which lead to KET service provisions. The KETGATE Consortium gained new experience in brokerage events by organizing one physical (Venice-Italy, January 2019) and one virtual event (May 2020). Due to large number of KETGATE Points, the events had a very international character and enabled new connections that led to KET service

provision of RTOs to SMEs. For the successful organisation of the event, it was important to have a strong platform. This was especially crucial in the second brokerage event, which was held on a virtual mode. **Due to different challenges in the future, virtual events and meetings might gain higher importance.**

Consistent with the regional S3 strategy, policymakers are encouraged to make use of ERDF and other funds to engage their regional Technology Centres and Infrastructures to collaborate with other KETs Technology Infrastructures across borders so bridge the service and technology gap in their region. KETGATE project partners mapped and identified national/regional public authorities (PA) and policy makers (for example ministries, ministerial departments, state or regional agencies/organisations, funding managing authorities and bodies, etc.) whom they would approach and organise meetings to create awareness and handle policy recommendations.

The KETGATE project recommends offering incentives, financial mechanisms, financial instruments and enabling frameworks for policy makers to support their regional SME to use KET technology services across borders, in accordance with their Research and Innovation Strategies for Smart Specialisation (RIS3). The aim can be also to escalate **regional smart specialisation strategies to EU level** and vice versa. The use of EU cohesion and other EU funds/ funding sources for implementing KET financial instruments rather than national/regional funding sources possibly support cooperation of technology knowledge bases and enhance potential investment of blended public and private financial sources in Central Europe.



ACTIONS RECOMMENDED:

1. Increase the awareness of the potential of KETs to business growth. Although there is a fair motivation among SMEs regarding the integration of KETs in their manufacturing process, the benefits of their use are still unclear. Also, SMEs lack efficient sources of state-of-the-art information and regular updates. They currently largely rely on the internet and not on specialized sources.
2. Enhance transnational collaboration between research and business. The lack of specialized skills and the difficulties to attract financing can be mitigated by collaboration at European or international level. Skills, expertise and financing can be transferred to manufacturing companies interested in collaborating with European RTOs. In addition, **transnational collaboration** can strengthen weak innovation ecosystems and enhance cooperation between industry and technology centres and research institutes with multiplier effects for the local economies. Evaluation procedure, in particular the rating criteria used by financial instruments shall prioritize the establishment of links between companies and the applied research sector. National/ regional implementation of the KET financial instrument shall be based on KETGATE platform model that creates a reliable quality of 'one-stop technology consultancy targeted at SMEs' where SMEs and other relevant actors can access services offers derived from the capabilities of partner RTO. The overall goal of the KETGATE platform is to **connect organisations needing quality assured technology guidance with EU RTOs to help develop and implement technology solutions.**
3. Financial instruments shall support linking industrial sector with the RTOs. Financial instrument shall stimulate KET research and development and innovation of SMEs through collaboration with universities and research organizations (both private and public). This results in development of new, innovative products, processes or services. Financial instruments that build links between public and private knowledge providers (i.e. higher education institutes, public research bodies) and small businesses, shall be developed. Financial instruments shall help researchers based in third level institutions and RTOs to engage in research and support collaborative links between enterprise and the research community **that lead to the practical application of research in business**, yielding benefits to both groups.

International RTOs should apply for EU Calls such as INNOSUP and similar, in order to have the possibility to provide interregional and transnational R&D services to SMEs using consolidated schemes such as the Financial Support for Third Parties from the European Commission.

It is recommended to explore possibilities to align supporting schemes for companies (e.g. Component 5 on interregional innovation investments, which is an investment programme focusing on the commercialisation and scaling up of interregional innovation projects for the development of European value chains.)

One of the options to boost KET service provision is also to establish contacts to venture capital to support funding of start-ups and scale-ups to increase their liquidity also for contract research.
4. Promote and support the application of the Procurement for Innovation. Increased public R&D investment and greater collaboration within innovation ecosystems could foster the wider commercialisation of KETs-related products.
5. Developing/providing advisory services shall be complementary part of the financial mechanism or instrument to assist eligible public and private counterparts to improve the bankability and investment-readiness of large, complex, innovative projects that need substantial long-term investments.
6. Establish a transnational round table of stakeholders for developing and steering common actions in order to elaborate concrete action plans to foster RTO-RTO and RTO-SME cooperation and tackle obstacles, using existing cooperation networks and integrating the KETGATE Points Network in this framework.
7. Coordinate regional activities with European deeptech initiatives (e.g. digital innovation hubs, pilot lines).
8. Provide further brokerage events to support transnational contacts between SMEs and RTOs.

PROJECT DURATION

1. 7. 2017 – 31. 8. 2020

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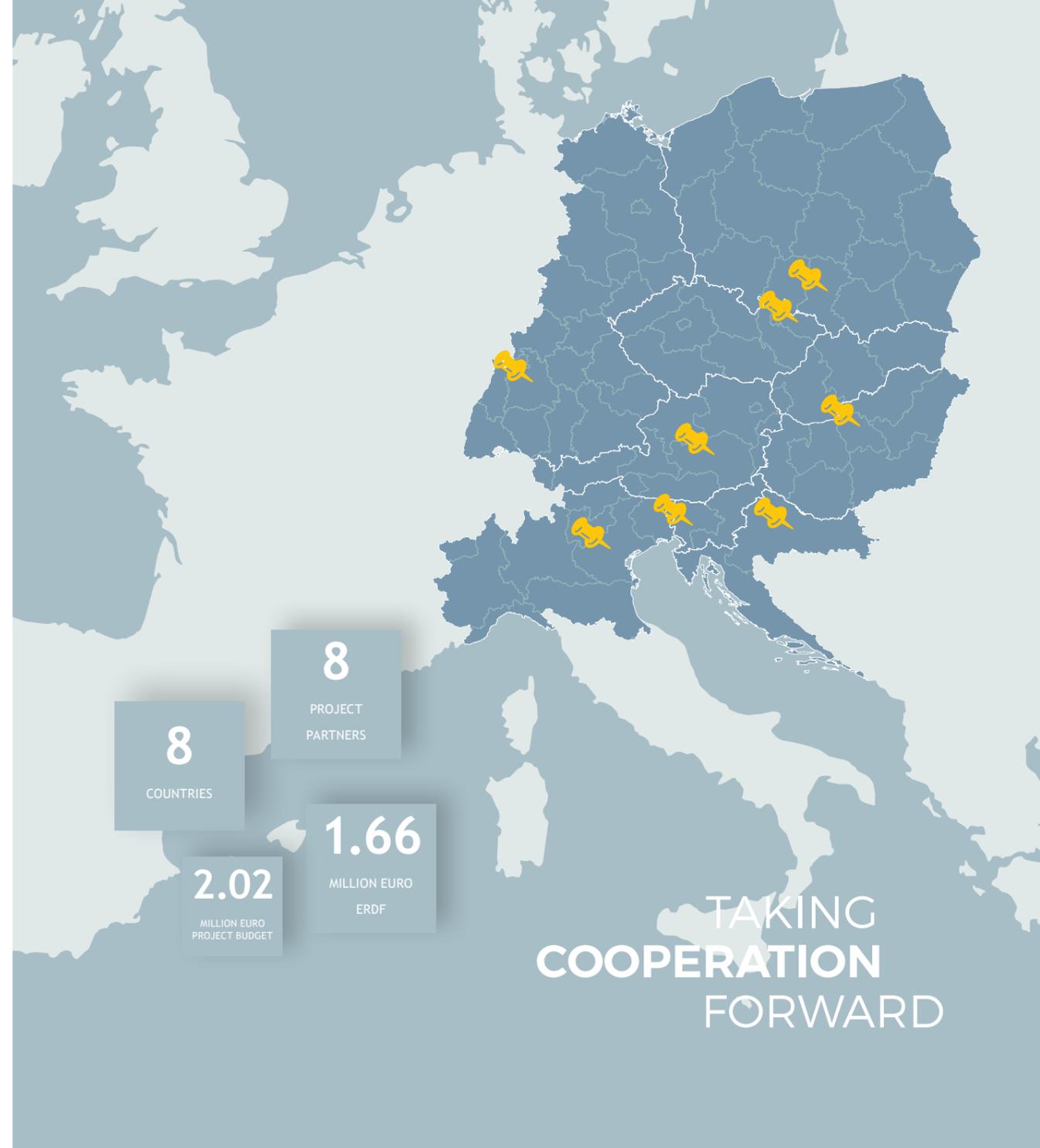
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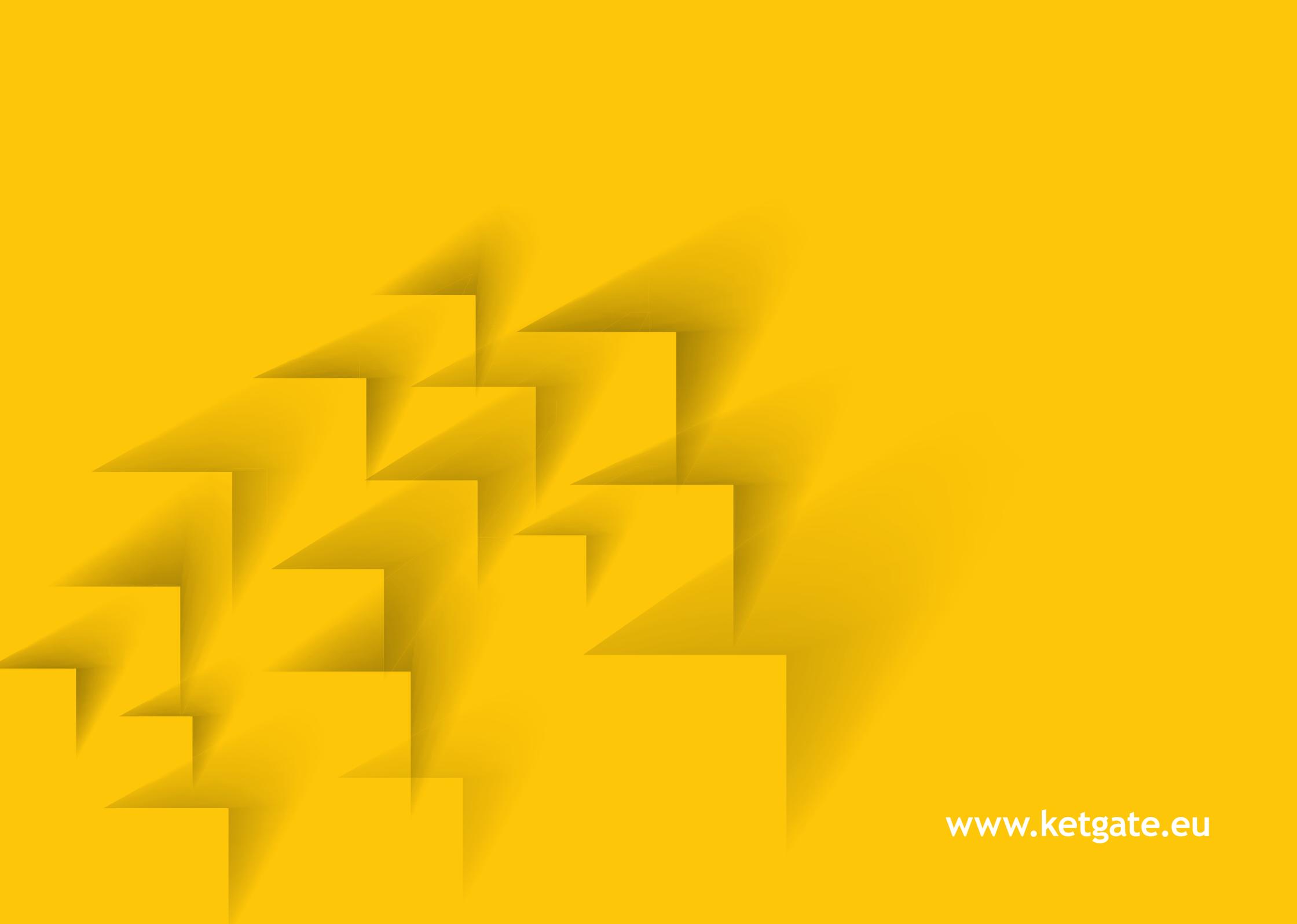
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