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.
DEAR READERS,

Undoubtedly, COVID-19 pandemic has affected the lives of every single individual on this planet and has severely influenced a great number of businesses around the world. Flash estimates for the European economy released by Eurostat indicate that GDP in the EU sank 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

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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.

KEY ENABLING TECHNOLOGIES KETS
- ADVANCED MATERIALS
- ADVANCED MANUFACTURING TECHNOLOGIES
- PHOTONICS
- INDUSTRIAL-BIOTECHNOLOGY
- MICRO- AND NANO-ELECTRONICS
- NANO-TECHNOLOGY

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.

We expect KETGATE to continue expanding in the following years to support industrial innovation across Central Europe.
KETGATE team worked together: Meetings in Ljubljana, Budapest/Miskolc, Venice, Stuttgart, Prague (pictures) and also online.

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 RET access and service network— and beyond was set up.

01/2019 — 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.

09/2020
KETGATE tools were revised and validated.
Simplification, some tools were cancelled.

05/2019
Timelines of the project

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
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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.
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 companies and experts on key enabling technologies.

The stakeholders explained how research and technology centres help them and the costs of innovation. They made it clear that information on cooperation experiences, barriers and mutual contact and cooperation.

About them, their potential clients and to facilitate the other KETGATE Points to provide specific information. Of course, every KETGATE Point had information on all the existing good practices from relevant European Communities with the focus on different societal

5. development of the project
4. contract negotiation,
3. tender procedure and offers selection
2. concept validation
1. identification and client validation

THE KETGATE STRATEGY

The strategy designed a network of KETGATE Points, which serves as counterpart for the Business Advisor at the KETGATE Point can be offered directly by the Business Advisor, if the need is in 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 validation,
2. concept validation
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, after 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. Each KETGATE Point hosts skilled and competent personnel. In particular, every KETGATE Point, a central role is assigned to the Business Advisor, who is the interface between SMEs and with the relevant research and technology centre, acting as KET service providers;

information on cooperation experiences, barriers and needs of SMEs;

status of KETs awareness and its usage in SMEs;

visibility of Research and Technology Organisations acting as KET service providers;

information on cooperation experiences, barriers and needs of SMEs.

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

The discussion made some common issues emerge. The main problem was the significant gap that divides small companies from Research and Technology Organizations.

The one hand, European SMEs want to innovate, but they find it difficult, as they do not know how to approach small and medium companies. Besides, there is a fundamental lack of communication between them.

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KETGATE PARTNERS

AUSTRIA

Institute of Physics
V-Research GmbH

The Institute of Physics is a public institute whose main activities are devoted to research, development and training in the fields of material characterization 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, V-Research GmbH’s (RECENDT) provides a range of services which enables the technology transfer to the industry standards through the foundation of spin-off companies.

Research Center for Non-Destructive Testing
Joanneum Research

Research Center for Non-Destructive Testing GmbH (REVISION) provides access to the latest technologies for NDT, as well as a sophisticated methodical approach in the areas of digital engineering, photonics and Trico-design.

CROATIA

Faculty of Electrical Engineering, Computer Science and Information Technology Osijek

The Faculty of Electrical Engineering, Computer Science and Information Technology Osijek is a part of the J. J. Strossmayer University of Osijek, the City of Osijek and the Osijek-Rača 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 90% clients contact TERA for consultancy services.

TERA Technologies Ltd
KETGATE Point

TERA Technologies Ltd is a joint-venture of the J. J. Strossmayer University of Osijek, the City of Osijek and the Osijek-Rača 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 90% clients contact TERA for consultancy services.

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Statisphere Europe-Scientia

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Research on complex functional material and nanometer-scale structures, exploration of physical, chemical, and biological principles, their exploitation in nanometric micro- and nano-systems, and in the development of characterization techniques.

University of Széchenyi István

The Technology and Knowledge Transfer Directorate of the University of Széchenyi István collaborates with the biggest multinational companies and also the family owned SAFEG.

The focus of these cooperation could be product or process development and production development. We have special, unique equipments like XStress Robot, which enables them to contribute to the success of the business in various branches. State-of-the-art equipment at their disposal make us a reliable partner, as well as support the development of municipalities.

HUNGARY

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Central Bohemian Innovation Centre

As a publicly funded Infrastructure, it will provide services to support entrepreneurship, in particular knowledge-based, i.e. with high added value, to foster collaboration between research organizations and industrial partners, to support the development of new businesses.

Research Centre for Energy Research, Institute of Technical Physics and Materials Science
Bay Zoltán Nonprofit Ltd.

Bay Zoltán Nonprofit Ltd. for Applied Research aims to contribute to 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 technology transfer services from applied research conducted at our university, in a cost-effective manner, developed in a way to enhance their competitiveness.

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KETGATE PARTNERS

ITALY

Padua Innovation and Technology (PIT) KETGATE Point

Padua Innovation 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 their ideas.

Today our services are oriented towards some of the main strategic sectors for the economy and the regional research system (ET, Additive Manufacturing, Metallurgy and Surface and Advanced Materials Technology, Energy and the Environment, Biotechnologies), but we also look ahead, more and more, through participation in European projects and other initiatives that favor the internationalisation of companies.

Veneto Innovation spa KETGATE Point

Veneto Innovation spa is a public company focused on the transfer of knowledge, promoting innovation and the application of high-technological standards, environmental improvement and human resource qualification.

POLAND

Institute of Non-Ferrous Metals (IMN) KETGATE Point

Institute of Non-Ferrous Metals is a research centre located at Wrocław University of Science and Technology. It is a leading research organization working in clean-technology fields such as coal-bed methane, carbon capture and storage, shale gas. Technologies for the production of individualized components and fully functional parts with complex geometries include the use of Additive Manufacturing processes 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. The purpose is to assist the academics: organize trainings and education. UniSMART valorizes IP, arranges and manages research projects, innovation consulting, Collaborative EU Projects, activities involving students and candidates, Masters, long-life learning courses and company education.

SLOVENIA

Jozef Stefan Institute KETGATE Point, RTO

Jozef Stefan Institute is a public, non-profit, state owned body. It is leading Slovenian institute in the field of building and environmental science. It is directly offering to companies, public institutes and other organisations is a quality upgrade of basic research.

The University of Primorska is successfully implementing its two core activities: research and education. The knowledge for the environment that the university is producing is directly offered to companies, public institutes and other organisations is a quality upgrade of basic research.
EVALUATION OF ANTIMICROBIAL ACTIVITY OF NANOFIBER BASED STRUCTURES

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 also the environmental footprint of the material.

The Bay Zoltán Research Institute provided invaluable 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 tool materials, and by this way to determine the possible proposals improving knives’ lifetime.

"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 have demonstrated the mechanical properties of the material, 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=PLPNU5DAOJAJSJCJWBPCBCJNQMDQMR5N

KETGATE Project Success Stories

7 videos • 54 views • Last updated on 18 Aug 2020

Company Phoenix, Croatia

Company Pardam, Czech Republic

Company MaterialScan, Italy
During the KETGATE project duration, the network expanded from initial 6 KETGATE points and 9 RTOS to 10 KETGATE Points and 20 RTOS from Central Europe. Since the establishment of the network, KETGATE points online visits increased to 80 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 booklet, where multiple RTOs presented their services and solutions, addressing different challenges in the future, virtual events and makeup-up growth in their reputation. Consistent with the regional S3 strategy, policymakers are encouraged to make use of CSR and other funds to engage their regional Technology Centres and Infrastructure to collaborate with other KET Technology Infrastructures across borders to bridge the service gap and technology gap between the regions. The regional Technology Centres and Infrastructure platform required and identified national-regional, transnational and local key-stakeholders /policy makers (the example: ministries, regional departments, state or regional agencies/organisations, financing managing authorities and bodies, etc) whom they would approach and organise regional KETGATE events to create awareness and handle policy recommendations.

The KETGATE project recommends offering incentives, Financial mechanisms, financial instruments and public authorities to engage KETGATE points RTOS to use KET technology services across borders, in accordance with the Horizon Europe Research and Innovation Framework programme, in particular the rating criteria used by related RTOs and KETGATE points. The implementation of the KET financial Instrument shall be the KETGATE platform activity. This is an applicable, fulfilling the research community level institutions and RTOs to engage in research and cooperation between industry and technology centres and research institutions with multiplier effectiveness, in particular the rating criteria used by related RTOs and KETGATE points.

The overall goal of the KETGATE project is to connect organisations into the network, encourage them to use KET technology services across borders, in accordance with the Horizon Europe Research and Innovation Framework programme, in particular the rating criteria used by related RTOs and KETGATE points. The implementation of the KET financial Instrument shall be the KETGATE platform activity. This is an applicable, fulfilling the research community level institutions and RTOs to engage in research and cooperation between industry and technology centres and research institutions with multiplier effectiveness, in particular the rating criteria used by related RTOs and KETGATE points.

In order to maintain the network, it is important to strengthen its integration. Within this project, it was done by providing funding for RTO-SME collaboration and organizing important events of SMEs, which expressed KET service requests. By engaging the interest of SMEs and KETGATE network 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 KETGATE project and related services, technology solutions and enable the users to use SMEs to use KET technology services across borders, in accordance with Horizon Europe Research and Innovation Framework programme, in particular the rating criteria used by related RTOs and KETGATE points, this is an applicable and fulfilling the research community level institutions and RTOs to engage in research and cooperation between industry and technology centres and research institutions with multiplier effectiveness, in particular the rating criteria used by related RTOs and KETGATE points.

It is recommended to explore possibilities to align the financial mechanisms, financial instruments and public authorities (PA) and policy makers (for example ministries, regional departments, state or regional agencies/organisations, financing managing authorities and bodies, etc) whom they would approach and organise regional KETGATE events to create awareness and handle policy recommendations.

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