

Interreg Baltic Sea Region

Mid-term evaluation of Programme impact

Case Study Report

Baltic Tram



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1 Executive Summary

Impact on Target Groups by Baltic TRAM

SO	Target Group	Processes where Target Groups are involved	Learning Experiences /Use of Project products and results	Specific Impacts on the Institutional Capacities of target groups	Dimension of institutional capacity
1.1	Members of the community in connection of Research Infrastructure: industrial users, public administration, regional development agencies and the RIs themselves	Development and establishment of a structure for cooperation between national and regional analytical RI, universities and clusters regarding commercial users; documented by pilot activity reports, user survey after pilot activities and developed guidelines.	<p>Establishment of Industrial Research Centres (IReCs) as interface between the three groups of stakeholders inside the national or regional network and as an interface for exchanging measurements.</p> <p>Resolution from CBSS on joint offer of services to SME and companies.</p> <p>Joint understanding and conditions for offering services to be continued under the Science Link platform.</p>	<p>Increased knowledge on RI side offerings and their validation in spatial, temporal, and industrial dimensions by analysis of existing ARIs</p> <p>More efficient work of the RI, based on better informed political recommendations in future usage, investments.</p> <p>An increased a culture of co-operation between ARIs, scientific communities, industries and other stakeholders.</p>	<p>Enhanced institutionalised knowledge and competence;</p> <p>More efficient use of human and technical resources;</p> <p>Increased capability to work in transnational environment</p>
1.1	SMEs and Business Support Organisations	Pilot applications and experiments	<p>Dissemination base for the results of Baltic TRAM.</p> <p>Insights into the profiles of the experiments, e.g. their alignment (or not) to regional policies, interregional research-to-IReC-to-business cooperation, and potential for regional & interregional clustering by grouping the NACE codes.</p> <p>Business cases and database on test applications will become a "capitalisation" tool for the whole project and possibly future related initiatives.</p>	<p>Increased knowledge on user side needs and their validation based on pilot projects of WP5 in industry by analysis of the user experiences via the IReCs.</p>	<p>More efficient use of human and technical resources</p> <p>Increased capability to work in transnational environment</p>

2 Project description

The key aim of BALTIC TRAM is to link Research Infrastructures (RI) at research centres and universities with industrial enterprises in the Baltic Sea region. As part of "Baltic TRAM", national hubs are due to be set up in Sweden, Germany and Poland over the next three years. These hubs will serve as a network offering RI measurement and other services using neutron or synchrotron radiation to industrial customers, locally and also by international exchange. An international network for industrial research will be set up. One university per country will coordinate the research and measuring orders by the industrial users. If measurements cannot be carried out locally, they will be forwarded into the international network. The organizational structures to be developed for this purpose will be tested in pilot activities before being expanded step by step.

The Baltic TRAM project is one of several activities of the ScienceLink network, which is a cooperative venture involving leading universities, research centres and regional development partners in the Baltic Sea region, whose aim is to turn scientific findings into innovations more swiftly. Through Baltic TRAM and ScienceLink, the consortium strives to help set up cooperative research ventures with the industry in the Baltic Sea region which can benefit both sides. BALTIC TRAM is in part a continuation of the successful Science Link project co-funded by the INTERREG IVb program during 2011 to 2014.

The challenge behind Baltic TRAM is that investments in RI do not reflect sustainable demand, do not sufficiently take into account Smart Specialisation Strategies (S3) of areas, and do not promote effectively enough meaningful interactions between RI and businesses. Additionally, the community in connection to RI is weak. Furthermore, funding programmes for SMEs on national and transnational level for user inspired basic research are missing. It is a social challenge to speed up the implementation of research results from basic and applied research in industry.

The project is funded under the Interreg Baltic Sea Region Programme under SO 1.1. It has a budget of EUR 4.16 million, of that 3.2 are funded by the ERDF within the Programme. The project will run from 2016 to 2019.

Baltic TRAM will address three levels: 1) It will tackle the market failure of "unsustainable demand for RI" and establish national networks which provide regional service and support the community. 2) Furthermore, analytical research activities and experiences will be exchanged via the transnational structure. 3) Pilot projects are intended for selected areas (e.g. nanotechnologies, food technology) for testing the solutions developed for national and transnational networks and lead to evaluation results.

These activities will strengthen the capacities of public administrations, companies and RI in the BSR states and, through international networking, lead to a balanced use of and cooperation between the RI. As interface, Industrial Research Centres will operate the regional networks of cooperating RI and organise transnational cooperation.

Five universities, four research institutes (including 2 large-scale RI), three regional active innovation "supporters" and two international organisations in the BSR are included as partners. The Council of the Baltic Sea States (CBSS) and Baltic Development Forum are involved. ESS and European XFEL are involved as associated organisations because the facilities are still in the construction phase.

3 Expected results, outputs and activities

Together with DESY, regional universities with research facilities and development agencies from Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland and Sweden establish industrial research centres to facilitate innovation uptake by companies. The partners pilot this type of cooperation in 60 test cases. The cases will be implemented both locally and across the borders.

There will be Calls to SMEs to receive a service from a larger research facility. In addition, there will be a database on the use of research facilities (open data), and the documentation of the test applications via business cases,

Expected project results and outputs*

Expected Project Results
The target groups are the members of the community in connection of RI industrial users, public administration, regional development agencies and the ARIs themselves. Through the structured transnational exchange of industrial research activities via a network of Industrial Research Centres (IReC) , the SME will be able to use ARI offer locally and in the whole Baltic Sea Region and thus have more different possibilities for research activities and a broader range of experimental sites and instruments they can use. For better cooperation with large-scale RI, IReC should get a privileged access to them. This direct access to large-scale RI for IReC will reduce the effect of uneven distributed large-scale RI in the BSR. Furthermore there will be cooperation with BSR organisations and networks; CBSS and BDF as partners, STRING partnership and BSPC as associate organisations and cooperation with the planned Baltic Science Network. Through the political support of the mentioned cooperation partners, established service structures in the BS states can be linked to national funding sources. The tools of a structured access to ARI via an IReC network and political support plus enhanced knowledge how to use the offers will lead to a better usage of existing and future ARI and instruments.
Expected Documented Learning Experience
Development and establishment of a structure for cooperation between national and regional analytical RI, universities and clusters regarding commercial users; documented by pilot activity reports, user survey after pilot activities and developed guidelines.
Expected Other Outputs
No. of enterprises receiving non-financial support: 60
No. of enterprises cooperating with research institutions: 60

*as defined in the Application Form Sections 3.8, 5.1 and 5.2.

Baltic TRAM encourages the manufacturing companies located in the EU to get in touch with the national Industrial Research Centers and apply for the free of charge measurements. After the 1st call for free of charge short-term measurements the Baltic TRAM project partners have been continuing the cooperation with the EU industry under the umbrella of the 2nd call. During the 2nd call, running from November 1st 2017 to April 30th 2018, totally 24 applications for short-term research services were sent in. The applications were submitted by Finnish, Swedish, German and Polish companies (17), which accounts for 70% of all those submitted. The remaining 7 applications came from Denmark, Latvia, Lithuania, Estonia and Denmark. The 2nd call for free of charge measurements was open to all industrial sectors as shown in the chart below. The 3rd call has just been launched and runs from the 1st of May until the 30th of September 2018.

In total, 51 SME have already applied, 21 measurements have been performed¹.

In addition to the calls for experiments, the open data pilot set-up is progressing, including technical and content aspects. In parallel, the material that will form the data base of the pilot is also being

¹ from interview with project partner

prepared and based on the completed experiments contributed by the IReCs being responsible for each experiment, and coordinated by Kainuun Etu. The result is: 5 case studies out of 46 experiments.

The project partners have been able to gain very useful insights into the profiles of the experiments, e.g. their alignment (or not) to regional policies, interregional research-to-IReC-to-business cooperation, and potential for regional & interregional clustering by grouping the NACE codes. Once the more case studies are completed, the more extensive sample will function as a “capitalisation” tool for the whole project and possibly future related initiatives.

The activities of the project include several dissemination and communication measures, conferences and workshops to raise awareness among stakeholders in the BSR and to attract potential commercial users and analyses on industrial clusters, national strategies (national or regional Smart Specialisation Strategies, roadmaps in science).

4 Project partnership

The partnership is a cooperation of large-scale RI, analytical RI (ARI; universities, research institutes) and regional development authorities. The Baltic Tram partnership consists of 17 partners including mainly higher education and research institutions (11 partners), business support organisations and sectoral agencies. There are five associated partners, such as important networks and research institutions. According to the lead partner the project partnership is effective. The project faces one problem, that some partners do not have financing partners for the support of SMEs. According to the University of Turku public authorities are needed in the project to disseminate the outputs and results of the project to wider audiences in regional, national and macro-regional levels. They also make connections to the needed decision making and administrative bodies and ensure this way a long term sustainability of the activities and wider societal and economic impacts. Public partners ensure also stakeholder engagement and connect our work with regional development (e.g. RIS3) policies and practical work as well. The only regional partner (Kainuu Etu) "holds the approach on the ground" (LP).

Even if there are semi-public agencies with a non-public status in the project, there are no private partners, for profit partners. The project has the objective to build up structures to support SMEs. Thus SMEs are the main beneficiaries of the Call for experiments (test cases) as test partners, and receive the services from the project.

Regional and Local Public Authorities	Invest in Skåne		
Research Organisations	DESY Deutsches Elektronen-Synchrotron	University of Latvia	University of Turku
	Helmholtz-Zentrum Geesthacht Zentrum für Material und Küstenforschung GmbH	University of Southern Denmark	Jagiellonian University (JU)
	Polish Academy of Sciences	University of Tartu	
Other	Kainuun Etu ltd	Foundation of Innovative Initiatives	Permanent International Secretariat of Council of the Baltic Sea States, CBSS
	Innovation Skåne AB	Kaunas Science and Technology Park	Baltic Development Forum (withdrawal)

5 Contribution of the project to the EUSBSR

Baltic TRAM is an activity of the flagship project „Baltic Science Link“ in the priority area Innovation. It contributes to the action "Establish a common Baltic Sea region Innovation strategy". Furthermore it is part of activities in the priority area SME. Baltic TRAM is a topic in the Horizontal Action Neighbours as it fits well in the Russian North-West Strategy in the area of innovation.

The EUSBSR flagship Science Link is the umbrella for this project Baltic TRAM. Science Link offers companies the opportunity to investigate a current R&D issue by using state of the art scientific analysis at Europe's leading neutron and synchrotron research facilities². Baltic TRAM tries to improve and integrate more this offer to companies. Science Link offers the opportunity to have a sustainable and on-going communication work on the results of Baltic TRAM and to attract easier additional funding.

The project has a strong connection and intensive exchange with PA Innovation. Two new projects derive from the cooperation. The macro-regional policy angle of activities adds to the impact generated by the project. Since Baltic TRAM is part of the PA Inno flagship Baltic Science Link, then the CBSS-led report on innovation and smart specialisation governance across the Baltic Sea Region is being drafted in line with the recently published PA Inno Strategy Guide: Putting the Action Plan Into Practice. Namely, the development of Baltic Sea Region-wide network of Industrial Research Centres (IReCs) will serve to "*meet the increased needs associated with opening up national and sector specific systems*". Moreover, Baltic TRAM serves as the best example in applying smart specialisation at the macro-regional level. It allows exploiting the full potential of smart specialisation, which thus far has been developed on the regional and national governance levels³.

6 Communication and outreach to target groups

The main target groups are politics/administrations and intermediaries. The project manager stresses that SMEs are not in the focus of the project as a direct target group. They concentrate on intermediaries that can connect SMEs and research institutions.

Target Groups
WP2: universities, research facilities, regional development authorities, industry and cluster representatives, business organisations, national ministries, regional authorities, national and regional authorities, ministries, representatives of EU institutions
WP3: National ministries and other relevant public actors such as Strategic Partners of the Council of the Baltic Sea States
WP4: Applicable ARIs (Analytical Research Infrastructures) incl. universities, regional development agencies, national ministries, industry representatives like incubators or chambers of commerce within BSR, Science Link Network
WP5: Local/regional agencies about the importance of facilitating access of SMEs to RIs located locally and abroad

Source: Application Form Section 4

The target group is involved in the network, the project establishes and that should work after the end of the project. The political level is already quite aware of the importance of a stronger cooperation

² https://www.science-link.eu/the-offer/index_eng.html

³ Niclas Forsling, PA Innovation about the Baltic TRAM project in a news article on "Baltic TRAM Opening Conference" <http://www.cbss.org/the-baltic-tram-opening-conference/>

between research institutions and SME. The project is e.g. part of a resolution from the CBSS. There have been manifold learning experiences in the target group, according to the interlocutors.

The project uses intensively the PA Innovation network to communicate the project.

The LP stressed that SMEs are not a direct target group, but they cooperate with companies through the services provided. This is crucial for the project. The subject of the BT offer is free of charge measurements for the companies perform by analytical research facilities, measure samples – early stage of the research, do not validate or test prototypes, providing info to companies about the offer (is very time consuming) as they very often are not aware of the importance of the measurements

Companies have difficulties to understand why they need to measure (in particular when they do not have own R&D departments). This is a main challenge for the intermediaries to explain.

Other interlocutors highlighted SMEs as an important target group of the project.

For the University of Turku private partners have helped to develop a sustainable business model and logic. When it comes to collaborating together with SMEs universities (being academic by their background) still have a lot of to learn. In many respects SMEs bring added value to the activities by bringing in another point of view.

The partner Kainuu had also an additional result: the partner published together with the LP and CBSS a smart story on Kainuu and the involvement of stakeholders in the JRC newsletter; the same team also contributed a peer reviewed and approved article. According to the partner Kainuu there has been a lot of tacit and proactive dissemination of the BSR Interreg through Science Link and the Baltic TRAM projects and the efforts for permanent networks.

7 Impact on target groups

The expected results of the project lead to a potential impact among targeted stakeholders in the following dimensions and characteristics of institutional capacity:

Dimensions of Institutional Learning induced by the Project			
Enhanced institutionalised knowledge and competence	Impact on the availability of knowledge about blue growth opportunities in novel fields	Impact on the availability of mechanisms for knowledge transfer	Impact on the utilization of knowledge about blue growth opportunities in novel fields
More efficient use of human and technical resources	Impact on the utilization of human resources	Impact on the utilization of technical resources	Impact on the application of time-and/ or resource-saving measures
Increased capability to work in transnational environment	Impact on the available competences to work transnationally	Impact on the frequency of transnational contacts	Impact on the intensity of transnational contacts

Source: Application Form Section 3.8

The impact on the target groups will be:

- Easier access to ARIs and their services by SMEs and other companies.
- Enhanced product and technology development in SMEs
- New product innovations
- Better service portfolios and processes at universities that offer industrial research services for companies
- macro-regional network of ARFs and better collaboration in science based analytical measurement services
- Sustainable Network of IRCs (IRCNet)
- Macro-regional Research voucher scheme (suggestion)
- more competent ILOs (Industrial Liason officers) working in the research services at universities
- Sustainable business models in regional IRCs

By late summer 2017, Baltic TRAM has reached a first major goal, i.e. to install a network of Industrial Research Centres (IReC) in the Baltic Sea region which supports industrial users. By September 2017, fifteen companies submitted an application for access. In parallel to the call, the project started checking the need for an international network to cover the demand by industrial users in different regions. So far, this assumption was recognised true with half of the applications exchanged internationally. In parallel, the partnership analysed existing innovation systems (the respective “landscape”) on a transnational level and published in a report. Additionally, the first call for research services in the Baltic TRAM project was launched with a total of 24 applications for short-term research services submitted. Finally, the project has already gained prominent exposure in different publications and events.

For the University of Turku (UTU) the project is a good practical tool to develop both the internal marketing and service development processes and external also collaboration with other regions and universities, intermediate organisations and innovation agencies across the BSR (IReCNet)⁴. Until now UTU has been able to develop the existing service portfolio and service path, got the offering more visible and gained new industrial customers through the BT open calls for companies.

The project has done first steps to get “Learning experiences” out of pilot activities. The involved partners have installed a structure to act as Industrial Research Centres (IRC) in the project calls. Draft guidelines for collaboration in the network have been developed to secure in the pilot activities the interaction of all partners. The Draft guidelines for collaboration in the network will be revised in the sixed period to get a stable and sustainable network after closing the project⁵.

In Poland an IRC network has been established with the support of the project.

The project has received 51 applications by industrial users. This has shown an initial demand by industrial users. A deeper analyse – e.g. by sectors or geographically – is not available yet. The project will have a deeper insight in industrial needs only after closing the pilot activities. Nevertheless

⁴ Interview with project partner.

⁵ Project Progress Report

an user survey has been developed to collect the opinions of the users, which has taken part in the pilot activities⁶.

For Kainuu the project has a huge impact. The partner and the region could get familiar in depth with analytical research infrastructures (ARI), their services, operational linkages to businesses, associated EU policies and networks of ARIs and interactions with universities⁷.

Examples for impacts on institutional capacities:

A Latvian company producing lipstick needed to find out how a lipstick reacts to being heated in a warm car during the summer. In a similar case, where the reaction to heat needed investigation a Swedish steel company was looking to analyse steel pellets to find out how the constitution of the pellets changed when they were exposed to heat. In a third case a wood processing company in Finland wanted to find out about the degrading processes of the surface of woods and the DESY synchrotron x-ray was able to assist. Using the synchrotron is costly but compared to other methods it is very fast. Additionally, the customer receives expert advice at DESY and a problem solving service that is not otherwise available.

Baltic TRAM project supported a company to find out the composition of the side flow material from their production process. This helped the company to engage into a product development to create a new product from the material that previously was discarded as waste. The results of the measurements provided unique information that allowed the company to expand into a new product portfolio in a very different market segment.

An Estonian company was in search of the possibility to carry out specific measurements and analysis that were extremely needed for the further development of the company's new potential products. The theoretical background concerning the measurements was provided by the IREC. Furthermore, several meetings with IREC researchers helped to understand the topic deeper. The company was able to continue product development of multiple new products by getting factual information about the nano-scale distribution of nanofibres and the structure of the resin in the 5 sample materials. As the company found a local partner to continue their product development and to better understand the effect of surface functionalization and different components in the resin system.

⁶ Project Progress Report and Interviews

⁷ Interview with project partner

8 Annex

List of Interviews conducted for the Case Study Research

Name	Organisation	Role in Project	Contact data (email or phone)	Date of interview
Uwe Sassenberg	DESY	Project Manager	Phone: +49 40 37709 121 email: breitenbach@hafen-hamburg.de	June 28th 2018
Piotr Piwowarczyk	Foundation of Innovation Initiatives, Poland	Project Partner	phone: email: piotr.piwowarczyk@fii.org.pl	Written answers
Sari Stenvall-Virtanen	University of Turku	Project Partner	phone: + 358 40 5013757 email: sari.stenvall@utu.fi	Written Answers
Ninetta Chaniotou	Kainuu Etu	Project Partner	email: ninetta.chaniotou@kainuu.netu.fi	Written Answers

*Due to the dropout of the communication partner (Baltic Development Forum) an interview with the communication manager was not possible.

List of revised documents

- Project Application Form
- Project Progress Reports
- Project Website: <https://www.baltic-tram.eu/>
- Project Library BSR: Project Story of Baltic TRAM
- Website <https://www.science-link.eu/>
- Project Report: Study on better cooperation between Research Infrastructures and Industry. A final report to DESY, EU-Project Baltic TRAM. By technopolis group. August 2017.
- Baltic TRAM Business Cases:
 - Better understanding of nano-scale distribution of nanofibers facilitated new product development
 - Idea to use a side flow material reinforced and tailored for new products