BSUIN – Baltic Sea Underground Innovation Network

EGU General Assembly 2020

Session GI1.2

Cost Actions in Geosciences: Breakthrough Ideas, Research Activities and Results

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BALTIC SEA UNDERGROUND INNOVATION NETWORK

Interreg Baltic Sea Region
EUROPEAN REGIONAL DEVELOPMENT FUND
EUROPEAN UNION

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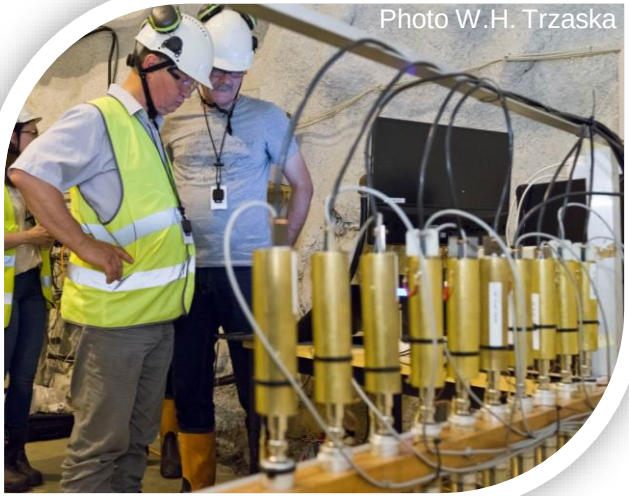
EUROPEAN UNION
EUROPEAN REGIONAL DEVELOPMENT FUND
BSUIN

Working together to improve the utilization level and the capacity for innovation of the underground laboratories in the Baltic Sea region.



KERTTU SAALASTI INSTITUTE
UNIVERSITY OF OULU

OAMK
OULU UNIVERSITY OF APPLIED SCIENCES

UNIVERSITY OF SILESIA IN KATOWICE

SKB

KGHM Cuprum Centrum Badawczo-Rozwojowe

TU BERGAKADEMIE FREIBERG

GFZ Helmholtz Centre POTSDAM

VILNIAUS UNIVERSITETAS 1579 UNIVERSITAS VILNENSIS

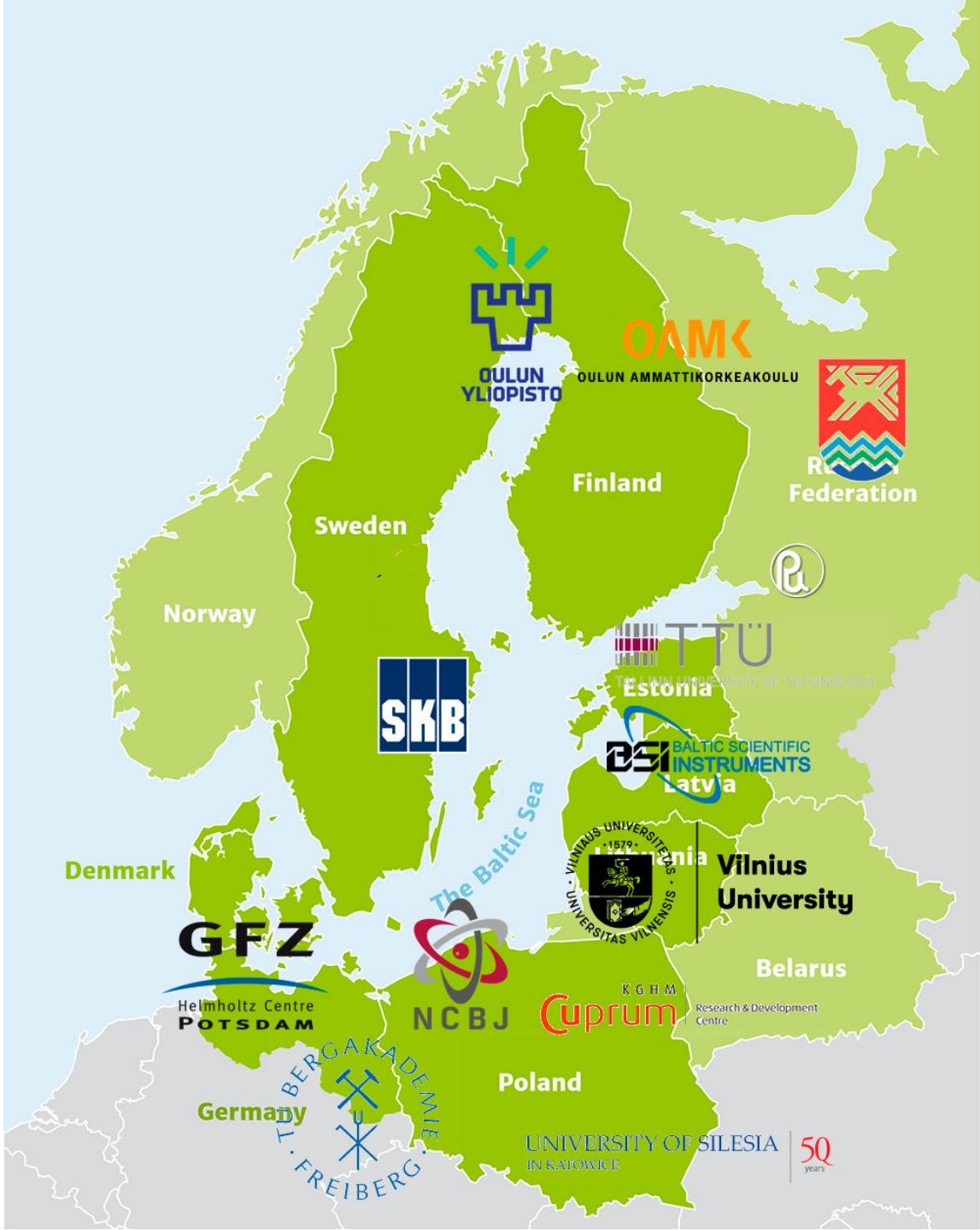
NCBJ

BSI BALTIC SCIENTIFIC INSTRUMENTS

TALLINN UNIVERSITY OF TECHNOLOGY

BSUIN project fact box

- Interreg Baltic Sea Region project
  - Capacity for Innovation the thematic area is priority for research infrastructure
- Project duration
  Oct 1st 2017 – Sep 30th 2020
- 13 full partners and 18 associated organizations
- Total of 15 activities, project management and communication in five work packages
- Lead partner: University of Oulu, Kerttu Saalasti Institute



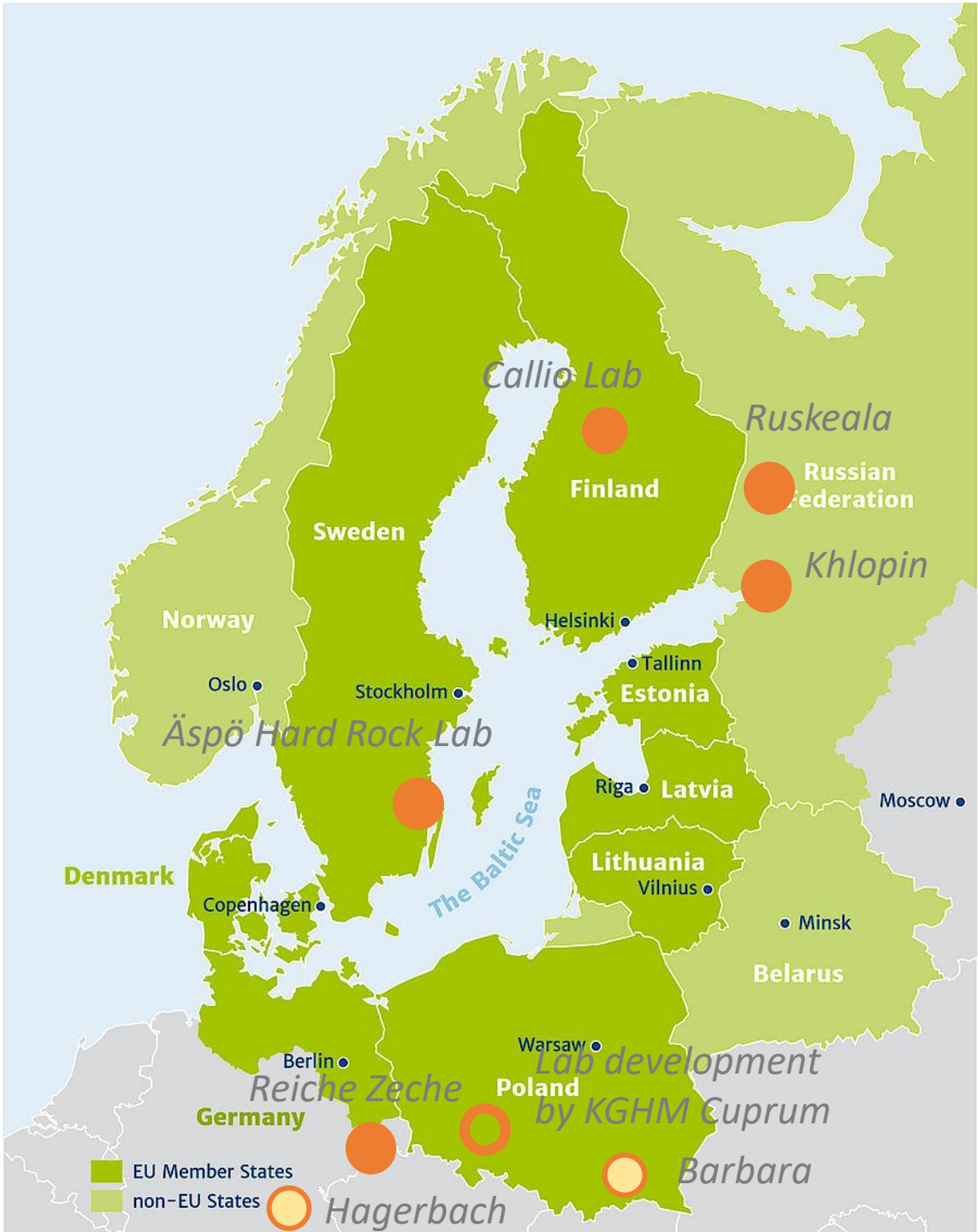
Baltic Sea Underground Innovation Network Laboratories

BSUIN partner laboratories

- ❑ Callio Lab, Pyhäsalmi mine, Finland
- ❑ Äspö Hard Rock Laboratory, Oskarshamn, Sweden
- ❑ TU-Freiberg's Research and Education mine "Reiche Zeche", Germany
- ❑ Conceptual Lab development co-ordinated by KGHM Cuprum R&D centre, Poland
- ❑ Ruskeala, Russia
- ❑ Underground Laboratory of Khlopin Institute, Russia

BSUIN Associated Underground Laboratories

- ❑ Experimental mine Barbara, Poland
- ❑ Hagerbach Test Gallery, Switzerland



Why the BSUIN project is needed

Transnational growth opportunity

Territorial challenges

Under-utilization BSR underground infrastructures
Several world class underground infrastructures in BSR (deep mines, specially constructed tunnels), maintained by organizationally quite small Underground Laboratories (ULs)

Innovations and growth of underground businesses through co-operation
The BSR Underground Laboratories and their users benefit from transnational co-operation to **speed up** the development of the ULs capabilities to serve industries, **maintain** high quality of the UL operations, and **create** new services and joint marketing efforts

Unique knowledge base
In BSR, there are world leading science organizations and industrial companies, specialized in geophysics, low background instrument manufacturing and underground construction

Territorial strengths

Vision & Aim

Create networking activities to gain

Synergy benefits for development
efficient methodologies to standardize the characterization of the underground facilities for end users, improved and innovative service concepts to enable the more efficient use of BSR ULs as a "natural resource" and **to save cost and effort** by joint development and sharing of best practices, especially for safety and improving underground facilities as a working environment

wider visibility, shared cost, new innovation through cross-pollination
By creating networking activities for continuous development, joint marketing and branding, more efficient utilization of technical resources and expertise, bigger variety of improved services and easy access to customers

Project activities

WP1
Project Management and Administration

WP2
Characterization of Underground Labs

WP3
Service Design

WP4
Underground Environment Improvement

WP5
Networking of BSR Underground laboratories and their users

Project outcome

1. **Characterization of ULs** to create shared methodologies for the assessment of technical properties (geophysics, structural and background radiation properties) of the underground facilities and the operational and legal requirements for using the underground infrastructures
2. **Service design** of methodologies and new service concepts so that the outside users can better utilize the ULs and the facilities as a capacity for innovation
3. **Facility development** especially related to ergonomics, health and safety and visitor experience
4. **Networking, branding and business development activities** to reach global market, providing easier access and one-stop-shop approach to BSR underground facilities

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BSUIN Outcomes

Project activities	Project Outcomes
WP1 Project Management	1. **Characterization of UIs:** Each of the underground laboratories is unique in their geological, technical, managerial, service and legislative settings. Set of methodologies to characterize and to compare the ULs have been created.
WP2 Characterization of Underground Labs	2. **Service design:** They key services, partners and current market segments have been identified. New service concepts have been created so that the outside users can better utilize the ULs and the facilities as a capacity for innovation
WP3 Service Design	3. **Facility development:** As the key characteristics of each UL have been evaluated, placed on the same evaluation terms, the suggestions for facility development especially related to working environment, health and safety and visitor experience has been introduced.
WP4 Underground Environment	4. **Networking, branding and business development activities:** One of the key items identified is the narrow customer segments and wider marketing of the ULs. The Innovation platform has been created to provide easier access and one-stop-shop approach to BSR underground facilities
WP5 Networking of BSR ULs	

Co-creation provides resources, new opportunities and enhances innovations!

Shared measurement equipment and systems
e.g. Gamma-spectrometer and analysis resources, site mapping

Standards for technical characterization
e.g. Site Discription Model

Joint marketing
e.g. Fairs and conferences, publications, LinkedIn, Facebook, Twitter, bsuin.eu

Collaboration projects

Multi-disciplinary knowledge base
e.g. Geological, geophysical, structural

Events and conferences
e.g. Organizing joint-events on underground science, education and technology: BSUIN roadshows

Open innovation platform
UL characterisation, innovation and service design information for the clients to choose the optimal ULs for their needs.

From BSUIN to EUL:

European Underground Laboratories association

The BSUIN consortium is preparing to carry on the well-progressed work as the European Underground Laboratories association.

The planned EUL association will be the umbrella organisation for the ULs and open to all other European laboratories hosting facilities for underground research

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Interreg
Baltic Sea Region

EUROPEAN UNION

EUROPEAN
REGIONAL
DEVELOPMENT
FUND

More information

Bsuin.eu

“Sometimes in the darkness you can see more clearly.”
— **Robert Macfarlane**