

# VirtualMine

as a modeling tool for Wider Society Learning

## Kick-off meeting in Wroclaw - let's start!

On April 24-25, 2017, the project "VirtualMine - as a modeling tool for Wider Society Learning", financed by EIT Raw Materials, was inaugurated. First step of our project was made in Wroclaw during kick-off meeting. The leader of the project is KGHM Cuprum Sp. z o.o. Research and Development Centre, and the consortium also includes Humanitarium Gardens of Experience from Wroclaw, National Mining University of Athens, Technical University of Košice, Technical University of Madrid, Slovenian National Building Institute of Civil Engineering, University of Mining in Dnipropetrovsk in Ukraine and i3D S.A. from Gliwice.

The aim of the project is to raise public awareness of the acquisition and use of mineral resources and environmental protection. The result of the work will be the creation of an educational program, including series of workshops for children and youth, exhibitions and multimedia tools related to the subject of mining, processing and recovery of raw materials, in particular copper. Due to its potential, the project will be continued by other European centers.

The program is sponsored by EIT Raw Materials CLC East with a budget of 202 900 Euro.

Kick-off meeting started in Humanitarium Gardens of Experience in Wroclaw where the participants were greeted and showed around the educational exhibition. Subsequently, the partners met at KGHM CUPRUM, where the agenda and further activities under the project were discussed. In the following days, field trips to the relict tin and cobalt mine in Krobica and the "Old Mine" in Walbrzych took place.

### IN THIS ISSUE:

02

**Partnership for Wider Society Learning**

03

**Lower Silesia Coal District - relict or future?**

04

**In the footsteps of the former ore mining - Krobica**

# Partnership for Wider Society Learning

The main goal of this project is to increase the awareness among local community about the importance of raw materials and its possible use for better development of the European regions. Furthermore, the project is to popularize mining among the general public, especially children and students who start to develop their path career, as well as to show the importance of the minerals in our modern world. The main stress should be put on creating conditions to convey knowledge on raw material as key to the development of the circular knowledge-based economy in the most effective way. Specific objectives are: showing attractiveness and diversity of mining through the use of customized, innovative teaching methods, strengthening the key competencies in children and students, such as practical use of obtained knowledge in the field of mining, creativity and entrepreneurship, as the skills necessary in further professional life and showing to the project participants the usefulness of education in sciences and their use in today's labor market in the context of planning an attractive career, breaking stereotypes about mining, generally applicable in the society, including use of raw materials. Showing social utility and application of mining in everyday life as the model of sustainable development, establishing cooperation between scientific and informal educational public entities to improve the attractiveness of vocational education in the faculties.

*"The VirtualMine educational program is developing the methods to encourage young people to choose a career in mining faculties"*



Inaugurating meetings at the headquarters of Humanitarium (above) and KGHM CUPRUM sp. z o.o. - CBR (photo: B.Bil).

The project combines the development of educational models with the knowledge-based economy of RM. Planned activities under the project will contribute to the rise of the creativity level and practical application of scientific and technical knowledge. The project will show that specialization in raw materials industrial applications can be "trendy" and, choosing the experimental science as a field of study gives a chance for an attractive career, not only in scientific units but in enterprises operating on the basis of intelligent specializations. The VirtualMine educational program is developing the methods to encourage young people to choose a career in mining faculties. Implementation of the project will strengthen the further development of increasing the involvement of informal education in attitudes.



# General facts of VirtualMine project

Leading partner: KGHM CUPRUM sp. z o.o. Research & Development Centre

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Duration: 2017/04/01 – 2019/03/31

## Primary KPIs:

1. Elaboration of different scenarios of RM informal educational model (demo, exhibition, workshops)
2. Building the network of KIC RM educators, animators and researchers taking part in the copper informal education platform
3. Building 3D applications: VR glasses, mined raw material display, simulation which modern devices and items are dependent on copper
4. Delivering the VirtualMine educational model based on copper example to 5 CLCs regions

## Workpackages:

WP1. The concept of the exhibition

WP2. Regional Networking and multiplication of RM model

WP3. Educational program

WP4. Building exhibition module - technical design of the exhibition

WP5. Project Management

## Lower Silesia Coal District - "Former Mine" Science and Art Centre in Walbrzych

<http://starakopalnia.pl/en/about-us/>

"Centrum Nauki i Sztuki Stara Kopalnia (en. "Former Mine" Science and Art Centre) in Wałbrzych is the biggest post-industrial tourist attraction in Poland, located in the former bituminous coal mine – Kopalnia Węgla Kamiennego "Julia" ("Thorez"). The 2014 revitalization of the biggest mine located in Wałbrzych which at the height of its activity employed several thousand workers allowed for the creation of an exceptional object among tourist attractions in Poland. Currently, it covers the area of 4.5 hectares of historic post-industrial objects with authentic equipment, such as a machine park which has been secured and made accessible for visitors. With the help of guides working in Stara Kopalnia (former miners who worked in KWK "Julia" in the past), all visitors can not only see the enormous scale of mine infrastructure, but also learn about the character of the dangerous and demanding work of a miner."



"Former Mine" Science and Art Centre in Wałbrzych (photo: K.Chudy and B.Bil)

# Krobica - Geopark of "mine-craft"

Geopark "Along the footprints of old ore mining"

The area of Krobica – Gierczyn – Przeczница is old mining district of tin and cobalt ore. Exploitation was carried out from the 16th century and ended in 1950s. The mining area was located near the medieval "Old Żytawa – Jelenia Góra Trade Route". "St. Mary-Ann" mine in Przeczница covered 10% of the cobalt demand in Europe. In the 20th century exploration of radioactive elements and tin was conducted. "Gierczyn" mine was finally closed in 1958. Liquidation included only main shafts while historic ones were left unprotected and destroyed over the years. As a result of cooperation of the Mining Institute of the Wrocław University of Technology and KGHM CUPRUM Research and Development Centre with the local self-governing bodies, the project under the title "Reclamation of the regions degraded by mining activity in the area of Mirsk Commune with the creation of the tourist path 'Along the footprints of old ore mining'" was developed. It was financed to a



Team of VirtualMine project during field trip to Krobica (photo: M. Kobylańska, K. Chudy, B.Bil).

## Exploitation in St. John's Zn-Co Mine started in 1576

substantial extent from the European Union resources, within the framework of the Regional Operating Programme for the years 2007 – 2013 in amount of 2.763.197,00 PLN (total value of the project was 3.881.458,45 PLN) . The project, executed under the author's leadership by KGHM CUPRUM (in consortium with the AMC – Zakład Robót Górniczych i Wysokościowych Andrzej Ciszewski) was of innovative and piloting character in the conditions of Lower Silesia.

The tourist and teaching geopark "Along the footprints of old ore mining" is the complex of three places: Krobica, Gierczyn and Przeczница which consist of 13 sites and viewpoints. The total length of the path is nearly 8.0 km, including an underground route with a length of 350.0 m. The starting point, and the first position of the path, is the underground tourist route "St. John" in Krobica, created on the basis of a set of historical mining excavations: the 16th century mine of the St. John's and the 18th adit of St. Leopold, where mining works were carried out in the years 1576 - 1633, 1755, 1770 and 1811 - 1816. The entrance to the underground excavation complex, open to the public, leads through the entrance and exposition vestibule, which is located in the area. A place was prepared in it for a small exhibition related to the history of the local mining. From the vestibule, visitors enter the proper excavation of the adit of St. Leopold, with which the interlevel glide reaches 11,0 m higher adit St. John's. At its level, well-preserved remains of exploitation pits are visible. St. John's adit brings the visitors back to the surface at the foot of the picturesque rock exposure over Krobicki Potok stream.