

## Optimization of Mining and Environmental Impact Assessment via On-Site Analysis Laboratory

- **Thematic Area: extraction**

Tin extraction in Brazil is focused on more than 60% in North West mines and mainly in the state of Rondonia (Bon Foturo, Santa Barbara, Massangana, Cachoeirinha...).

A crucial issue is the verification of the presence of other minerals of interest in extractive rocks with concentrations economically advantageous ( as tantalum, niobium, manganese and tungsten).

To improve actual process the idea is to develop a mobile laboratory able to preform on site analyses on production lots  
The mobile laboratory should be also able to carry out modular and progressive analyses with a protocol able also to give complete and certified results

A second application will be developed in order to cheek samples for the mine research

The third application of interest in this laboratory is the analysis of water contamination following extractive processes.

- **Expected synergies and complementarities:**

The project aims to combine technological expertise developed in Europe with specific needs and applications of one of Brazil's most important mining regions. Geological skills and business clusters are present in Brazil partners

- **Outcomes:**

Development of a mobile laboratory prototype for the analysis of minerals and water contamination. Development of the analytic protocols needed both at screening level and for official certification. Test and validate the process on a real site. Market analysis and specific business plan development.

- **Kic return:**

5% of the royalties on the instrument revenues for the next 5 years and in maximum limit of 500.000€

Use of local EIT Raw Materials node competences for the complete market analysis by a fee payment (around 20.000€)

Involvement in the technical and strategic business activities of partners associated to EIT Raw Materials

- **Market & Business opportunities:**

The possible market for this type of lab would be of the order of the hundred if you are able to guarantee unreasonable purchase and use costs. The Brazilian market for mining companies is the market. The project can demonstrate competitive advantages by implementing the region's mining skills and limiting the environmental impact.

- **Partners already identified:**

FBK, Tn Italia (<https://www.fbk.eu>) Expertize in analytical techniques envelopment in particular base on X ray.

- Federal university of Rondonia (UNIR; <https://www.unir.br/>) in collaboration with National Department of Mining Production (DNPM; <http://www.dnpm.gov.br/>) strong competence in mining and geology, capability to test and manage the developing lab.
- Possibility to include a mining company cluster as evaluation panel
- Hub innovation Trentino (HIT; <https://www.trentinoinnovation.eu/>) competences on elaboration of dedicate business model
- **Wanted additional partners :**
  - Equipment company to industrialize the x ay prototype
  - Equipment company to industrialize the Raman equipment
  - Scientific Partner to develop a suitable Raman equipment and dedicate methodologies

