

Integrated mineral technologies for morensustainable raw material supply.

ITERAMS: REINVENTING THE ROLE OF WATER AND WASTE IN MINING

SUSTAINABLE MINERAL SUPPLY IN THE EU

Economical, environmental and social sustainability

EFFICIENT WATER RECYCLING

- ✓ Reduction of water consumption by >90%
- ✓ Water quality optimization for each process step
- ✓ Recovery of valuable constituents from water solutions
- ✓ Efficient and economical water treatment methods

TAILINGS VALORIZATION

- ✓ Geopolymerization for water and oxygen tight covers on deposited tailings
- ✓ Waste rock and tailings as hardening mine fill or sold as products
- ✓ All remaining tailings safely deposited as a filter dry cake

MINIMIZATION OF ENVIRONMENTAL **FOOTPRINT**

- ✓ No effluents to environment
- ✓ No fresh water intake
- ✓ No dam failures
- ✓ Area conserved
- ✓ Enhanced mining
- ✓ Enhanced tailings value

ITERAMS AIM

The aim is to develop and obtain a **NEW PARADIGM PROOF OF CONCEPT** at mine sites to



recycle water and



valorise tailings



From water handling cost minimization



for an improved environmental and economic result to enable

to taking care of water properties and optimizing these properties for each process step. New water reuse concepts.



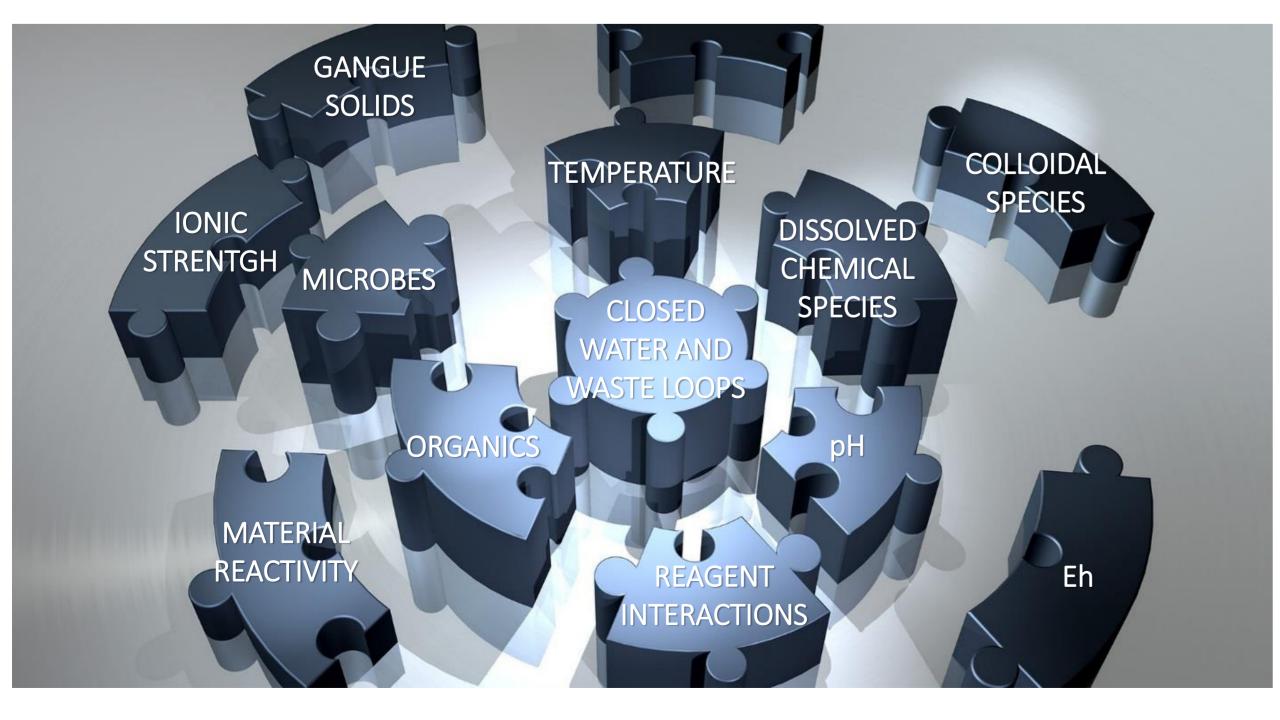
From depositing waste rock and tailings



to utilizing waste rock and tailings for added revenue as hardening mine fill or products. New ways of safe depositing of remaining tailings.

CHALLENGE

Complete closure of water loops increases thermodynamical and kinetic unstability and process disturbance. ITERAMS creates capabilities via laboratory experiments, modelling and validation at mine sites to tackle this complexicity.



CONCEPT VALIDATION

The developed ITERAMS water and waste efficient concepts are jointly validated by industrial and research partners at their mine sites. Three sites at Boliden (Finland), Somincor (Portugal) and Anglo American (Chile or South Africa) were selected to validate the results in various conditions, for example in various mineralogical and geographical areas. Information from laboratory tests, process assessment and technology validation is used for the development of the water recycling testing protocol.

PROJECT DATA AND CONSORTIUM

ITERAMS addresses H2020 issue "Sustainable selective low impact mining"

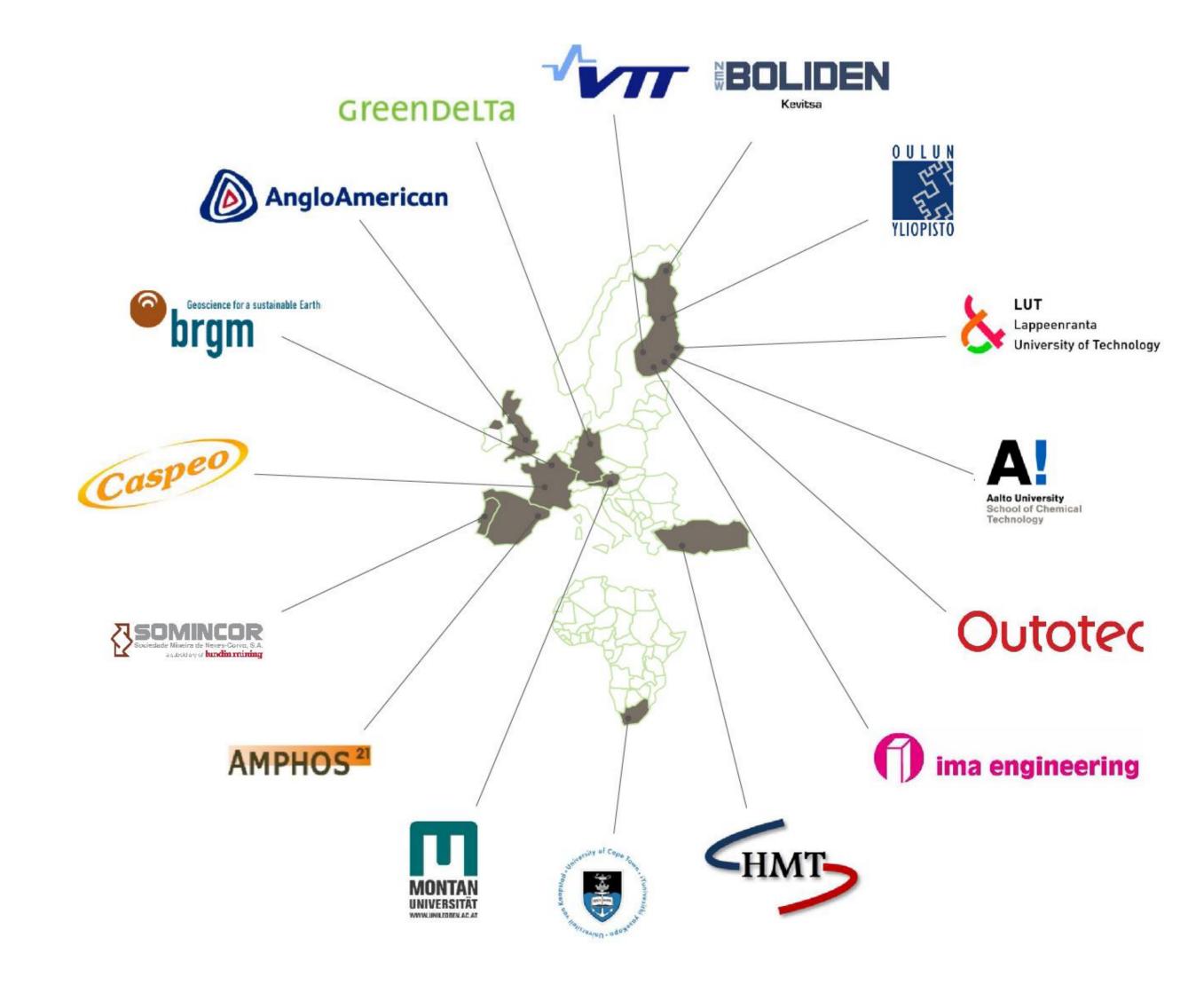
3 years: 1.6.2017 – 31.5.2020

Budget: 7.9 M€

16 partners

9 industrial partners, 2 RTOs and 5 universities from 7 EU Member States (Finland, France, Austria, Germany, United Kingdom, Spain and Portugal) and additionally from Turkey and South Africa. VTT coordinates the project.

www.iterams.eu





This Project has received funding from the European Union H2020 programme under grant agreement nº 730480.

