Joint conference of UNEXMIN & ¡VAMOS! Projects

USE OF ROBOTICS AND AUTOMATION FOR MINERAL PROSPECTING AND EXTRACTION

Second Circular

30 January 2018, Bled, Slovenia

Scope and Objectives
The aim of this conference is to bring together experts in the field of robotics, minerals exploration and mining (including underwater mining) to discuss about latest advances in the field and rise synergies on innovation in mineral prospecting and extraction. Afternoon sessions will be dedicated to workshops, related to technology roadmapping and technology exploitation. Networking, experiences sharing and establishing new cooperation links is also within the scope of this 1-day event.

Target Groups
• experts (geology, mining, robotics, machinery)
• minerals industry
• mining and construction machinery manufacturers
• robotics developers and manufacturers
• policy and decision makers in the field of mineral prospection and extraction

Date and Venue
The conference will be held on 30 January 2018 in Hotel Kompas, Bled. Bled town is situated in an alpine landscape of the NW Slovenia and is a popular tourist destination. The town is 35 km from Ljubljana International Airport and 55 km from the capital city, Ljubljana.

Organized by
Geological Survey of Slovenia

Co-organizers
UNEXMIN & ¡VAMOS! project partners

BMT Group Limited, United Kingdom
Damen Dredging Equipment BV, The Netherlands
Eaton Mine Educational Trust, United Kingdom
Empresa de Desenvolvimento Mineiro, S.A., Portugal
European Federation of Geologists, France
Federalni zavod za geologiju Bosne i Hercegovine, Bosnia and Herzegovina
Fondacija/Zaklada za obnovu i razvoj regije Vareš, Bosnia and Herzegovina
Fugro EMU Limited, United Kingdom
Geo-Montan Ltd, Hungary
Geoplano, SA, Portugal
Idrija Mercury Heritage Management Centre, Slovenia
Instituto de Engenharia de Sistemas e Computadores, Tecnologia e Ciência, Portugal
La Palma Research Centre for Future Studies, Spain
Marine Minerals Limited, United Kingdom
MINERALIA, Portugal
Montanuniversität Leoben, Austria
Resources Computing International Ltd (4dcoders), United Kingdom
SANDVIK, Austria
Soil Machine Dynamics Limited, United Kingdom
Tampere University of Technology, Department of Mechanical Engineering and Industrial Systems, Finland
Trelleborg Ede B.V., The Netherlands
Universidad Politécnica de Madrid, Centre for Automation and Robotics, Spain
University of Miskolc, Hungary
Zentrum für Telematik e.V., Germany
Real-Time Mining Project

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Travel Information

Travelling by plane:
Ljubljana "Jože Pučnik" Airport is the nearest airport, having regular flights from major European airports (London, Frankfurt, Paris, Zürich, Vienna, Brussels etc.), as with some other non-EU airports (Istanbul, Moscow). Venice International Airport has good connections with the South-East Asia and the United States. Venice-Trevisio Airport generally hosts low-budget flights.

Travel by train:
You can book your tickets from the web page to Bled-Jezero train station (less frequent, but closer), or Lesce-Bled station (approx. 1.5 km away; do not forget to inform us to arrange pick-up for you in the case you arrive to this station).

Miscellaneous Information
Slovenia is a member of EU, and is a member of the Schengen area. Currency is euro (€). Electricity is 220 V. Tap water is drinkable.

Contact Information
Local organisers:
Gorazd Žibret (general info), gorazd.zibret[at]geo-zs.si
Manja Žebre (registration), manja.zebre[at]geo-zs.si

UNEXMIN project coordinator:
Norbert Zajzon, nzajzon[at]uni-miskolc.hu

iVAMOS! project coordinator and technical management:
Jenny Rainbird, jenny.rainbird[at]bmtglobal.com
Stef Kapusniak, stef.kapusniak[at]smd.co.uk

Registration
Please register via email (manja.zebre[at]geo-zs.si) by 8 January 2018.

Required registration data:
- Name and surname,
- Institution,
- Title of the presentation and authors (optional),
- Up to 600-word (one page) abstract with one image (optional),
- Attendance to networking dinner,
- Possible special dietary requirements,
- Attendance to pre-conference field trip to Idrija.

Registration is free-of-charge. Individual invitations letters can be prepared if needed.

Accommodation
Accommodation is to be directly booked individually. Hotel Kompas, the conference venue, offers a discount price (single € 75, double € 88) for conference participants. To get a discount price, please fill-in the reservation form at the end of this document not later than 30 November 2017 and send it directly to the hotel staff. Free booking cancellation is possible up to 2 days prior to arrival.

If Hotel Kompas is not your preferred choice, feel free to choose your accommodation in plenty of other hotels or apartments, since everything is within walking distance from the conference venue.

Airport Transfer:
There are a couple of ways of transportation from the Ljubljana Airport to Bled: bus (via Kranj), ZUP shuttle (recommended, booking is required), Markun shuttle (booking is required), taxi or rent-a-car. You can also hire airport transfer when you book your accommodation. You can use the GoOpti shuttle transfer (booking is required) from other nearby airports, especially from Venice and Venice-Trevisio Airports.

Travelling by train:
You can book your tickets from Deutsche Bahn web page to Bled-Jezero train station (less frequent, but closer), or Lesce-Bled station (approx. 1.5 km away; do not forget to inform us to arrange pick-up for you in the case you arrive to this station).

Extend your stay in Slovenia
Slovenia offers a wide variety of natural and cultural amenities. Slovenia is a small country, situated between the Alps, Mediterranean Sea, Karst and Pannonian Basin, where everything is at hand. In an hour and a half, you can pay a visit to every part of Slovenia from the capital Ljubljana, situated in the heart of Slovenia.

Bled and Ljubljana are connected with regular bus lines (more or less every hour). The train connections are less frequent. More information on the transport connections between Bled and other larger towns of Slovenia can be found here.

More tourist information about Slovenia is available at the official web page.

Important Dates
Accommodation booking deadline at a discounted price 30 November 2017
Registration deadline 8 January 2018
Final conference program 23 January 2018
Field trip to Idrija 29 January 2018
Conference 30 January 2018
Field trip to UNESCO heritage site Hg mine in Idrija

The field trip to the Idrija Mercury Mine will consist of two tours. We will visit the oldest part of the mine, a 500-year-old Anthony’s Main Road, together with all the most important attractions in the underground world of the mercury mine (e.g. underground Chapel of the Holy Trinity, Attems’ Shaft). After lunch the tour to Hg Smelting Plant will follow, with a presentation of the history of smelting in Idrija and the exceptional significance of mercury, which marked the development of Idrija and contributed to the flourishing of human civilisation throughout the world.

For those arriving with morning flights on 29 January from BRU, FRA, STN, PRG, VIE, WAW or ZRH, a pick up will be organised at LJU airport at 11:30 a.m.

Confirmed presentations

UNEXMIN project: an underwater explorer for flooded mines
Luis Lopes, La Palma Research Centre for Future Studies, Spain

¡VAMOS! Project
Jenny Rainbird, BMT Group, United Kingdom

Advances in subsea mining
Stef Kapusniak, Soil Machine Dynamics Limited, United Kingdom

Robotics in Slovenia
Marko Munihi, University of Ljubljana, Faculty of Electrical Engineering, Slovenia

Use of Neural Network for geological data interpretation and data mining
Gorazd Žibret, Geological Survey of Slovenia, Slovenia

Future mining: scenarios and roadmaps (an international review)
Marco Konrat Martins, La Palma Research Centre for Future Studies, Spain

Real-time 3D mine model updates in the ¡VAMOS! project
Bleier Michael and Nuechter Andreas, Zentrum für Telematik e.V., Germany

Underwater sensors for UNEXMIN to obtain geological and geophysical Information
Norbert Zajzon, University of Miskolc, Hungary

¡VAMOS! test mission in Lee Moor
Stef Kapusniak and Paul Arthur, Soil Machine Dynamics Limited, United Kingdom

Real Time Mining – Progress Towards Continuous Decision Making in Mining
Mike Buxton et al., Delft University of Technology, Faculty of Civil Engineering and Geosciences, Netherlands

Exploitation Workshop

led by Geological Survey of Slovenia and BTM Group

Ensuring that the technology developed within research is exploited to its full potential is a very important part of almost every H2020 project. It assures that taxpayer’s money is properly spent and that EU citizens benefit from funding international R&I projects, like UNEXMIN, ¡VAMOS! and RTM, whether providing new jobs for EU citizens, providing high-quality scientific knowledge in the form of publications, enabling EU companies to be world leaders by owning technological patents and contributing to better legislation.

The workshop will be based around a hypothetical project that has a potentially very useful and highly marketable new technology, which has been developed by a consortium, consisted of large industrial partners, SMEs, public research institutes and universities. In this hypothetical scenario a lot of useful knowledge and know-how has been generated, which can be used by many partners individually. However, the technology as a whole still needs some investment in order to reach the target market, where great success is expected. We will use a carousel to discuss and propose exploitation strategies for this scenario.

The results of this workshop will be beneficial for both, ¡VAMOS! and UNEXMIN projects.

Research roadmapping workshop

led by La Palma Research Centre for Future Studies

The research roadmapping workshop aims to develop a strategic research agenda for both UNEXMIN and ¡VAMOS! projects. The roadmap exercise will assess future challenges for research and technology development against the backdrop of alternative futures by exploring different raw materials scenarios. Experts are invited to actively engage in the discussions, supporting the evaluation of technical, policy, environmental and economic aspects of the emerging technologies. The results will serve as basis for developing a technology roadmap for each project.
# Reservation Form

**Geological Survey of Slovenia**  
Use of robotics and automation for mineral prospecting and extraction  
Joint conference of UNEXMIN & ¡VAMOS! projects  
Hotel KOMPAS, Bled, Slovenia

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**Room rate per day:**

- **75 EUR**  Single room
- **88 EUR**  Double room – 2 persons (queen bed)
- **88 EUR**  Twin room – 2 persons (2x single beds)

**Supplement:**

- 1.27 EUR tourist tax per person per night
- 1 EUR registration fee per person per stay

- **Transfer Airport – Hotel Kompas** (Optional, 48 EUR for max 2 pax, 70 EUR for max 8 pax)

**Credit card type: (AMEX, VISA, EC/MC, Diners):**

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Please return completed form until **November 30th, 2017** via below fax or e-mail address.

**Hotel KOMPAS**  
Reservations  
Tel: +386 4 6205 118  
Fax: +386 4 5782 499  
e-mail: reservations@kompas-lovec.com  
www.kompas-lovec.eu

**Included:**

- Bed & Breakfast  
- Free Wi-Fi  
- Use of fitness  
- Wellness amenities (except sauna)  
- VAT