

Press release from Epiroc AB
June 27, 2018

New world standard for sustainable mining

Stockholm, Sweden: The mine of the future is carbon-dioxide-free, digitalized and autonomous. To set a new world standard for sustainable mining at great depth, LKAB, Epiroc, ABB, Combitech and AB Volvo have joined forces in a partnership and are starting a unique testbed in the orefields of northern Sweden.

The testbed, SUM, Sustainable Underground Mining, will be created in LKAB's underground mines in Kiruna and Malmberget and will also take the form of a virtual mine. Here, new technology will be developed and tested in a real mining environment to ensure that the Swedish mining industry can remain competitive and create jobs and growth, both locally in Norrbotten and nationally. This requires new control systems, new and improved mining equipment, as well as complex and efficient management systems that meet future demands for a sustainable industry. Reaching that goal will demand a new type of collaboration, a digital ecosystem in which the partners' digital systems and operations are linked.

"Sweden's mining and minerals industry is competing to be the world's most sustainable. Since sustainability requirements and technology are now developing at a rapid pace, Swedish companies have to join forces to ensure that we can mine safely and sustainably in the future. That bodes well for a mining nation like Sweden," says Mikael Damberg, Minister for Enterprise and Innovation.

After 2030 LKAB must be ready to mine at greater depth in the Kiruna and Malmberget mines. For this, one of Sweden's biggest industrial investments ever, decisions will have to be taken in the mid-2020s. To be able to realize the technology shift and reduce climate impact, LKAB, ABB, Epiroc, Combitech and AB Volvo have joined forces to find solutions and set a new world standard for sustainable mining at great depth that would entail a major leap in technological development.

"LKAB has a longstanding tradition of innovation and, to secure long-term competitiveness, we must find new methods and smarter solutions for continued mining of the world's best and purest iron ore deposits deeper in our underground mines. We are proud to enter into one of the biggest collaborative ventures in Sweden today, a venture involving industry leaders that are contributing expertise and technical resources. Together, we will develop a future mining industry that is sustainable, safe, carbon-dioxide-free, digitalized and autonomous," comments Jan Moström, President and CEO, LKAB.

"We're proud to be part of a collaborative effort to develop the world's most modern mining operation. This aligns well with our focus on autonomous and battery-operated products and solutions that improve productivity and safety in the mines," says Per Lindberg, President and CEO of Epiroc.



The battery-powered Epiroc Boomer M2 Battery drill rig

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"LKAB is taking a whole new approach to the development of future mines with unique digital and sustainable solutions. We look forward to partnering with LKAB, Epiroc, Combitech and AB Volvo and contributing our knowledge of automation and electrification of underground mines and services. Digitalization presents tremendous opportunities and, together with our partners, we are creating the safe and efficient mines of tomorrow," says Johan Söderström, Managing Director, ABB Sweden.

"Via this partnership, we can derive maximum benefit from digitalization and create the sustainable mine of the future. We are proud to participate in a very important effort whereby we can contribute our expertise and experience of linking automated processes and people by means of so-called digital ecosystems," says Hans Torin, CEO, Combitech.

"Swedish industrial competitiveness is based on innovation, collaboration between society and strong, international companies, and a genuine ambition to find systems solutions that are environmentally, socially and economically sustainable. In this way we are assured, jointly and individually, of our leadership role in the world. For the Volvo Group it is vital to be part of complete systems solutions that create prosperity for society and industry. In a technical paradigm shift where automation, electromobility and interconnected systems play a key role, this collaborative effort will strengthen our competitive advantage globally," comments Martin Lundstedt, President and CEO, AB Volvo.

Within the framework of the testbed the best means of building an efficient autonomous production system that is carbon-dioxide-free and has the highest conceivable level of safety will be studied. In the future autonomous and digitalized mine people and machines will work side by side. Implementation of the project will require very significant investment on a national scale and the partners are therefore seeking collaboration with more suppliers, the Swedish state, research institutes and universities.

The joint press conference, which will be held today at 11.30 a.m., will be broadcast live via the following link (in Swedish):

<https://edge.media-server.com/m6/p/pjqsna7q>

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Read more at www.sustainableundergroundmining.com

Epiroc is a leading productivity partner for the mining, infrastructure and natural resources industries. With cutting-edge technology, Epiroc develops and produces innovative drill rigs, rock excavation and construction equipment, and provides world-class service and consumables. The company is based in Stockholm, Sweden, had revenue of SEK 31.4 billion in 2017, and has more than 14 000 passionate people supporting and collaborating with customers in more than 150 countries. Learn more at www.epirocgroup.com.

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