

Media Release

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BeltGenius ERIC: Digital twin increases the performance of belt conveyor systems

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- **BeltGenius ERIC identifies inefficient system sections and belt segments**
- **Optimum utilization of system capacity with complete safety**
- **Reduction in energy and operating costs**

Crailsheim, Germany. BeltGenius ERIC (Efficiency and Reliability Intelligent Control) from Voith analyzes a range of data to determine how efficiently the belt conveyor systems of a mine are operating. Standardized values make it easy to compare individual conveyors. This gives mine operators numerous starting points for increasing the productivity of their system, while also lowering energy consumption and thus cutting CO₂ emissions.

BeltGenius ERIC is a new software solution developed by Voith. It allows mine operators to see at a glance the efficiency of their conveyor belt systems at any time. The gathered data provide them with numerous starting points to ensure the optimum use of their system, thus reducing their operating costs.

The system continuously receives relevant performance data from the conveyor belt system. These data include belt speed, belt tension, effective motor power for all drive motors, and temperature. These parameters are then transmitted to a server at Voith. The server contains a digital twin of the system, in which all relevant information about the conveyor are stored, such as belt length, belt width, the diameter of the carrying rollers, drive pulleys, return pulleys, the configuration of the transfer stations, the topography, and the trough angles. Using this information, ERIC determines a normalized efficiency value referenced to the energy consumption for horizontal material transport, known as the Energy Performance Indicator (EnPI). This indicator allows the operator to

see at a glance just how efficiently the particular belt conveyor is currently operating. The data are visualized on the client's individualized user interface, in the form of an online dashboard.

The normalization makes it possible for the mine operator to easily compare all existing systems in terms of their energy performance. Voith also offers the option of equipping individual belt segments with RFID chips. Less-efficient belts and system sections are easier to identify, and if necessary replace, by means of the interaction between the digital twin and the RFID. Thanks to its transparent display, BeltGenius ERIC provides a straightforward way to reduce energy consumption, and thus the operating costs, of mine operation.

At the same time, the digital twin compares the installed power to the energy actually being used. This allows the operator to identify power reserves. In this way, the existing capacities of the belt conveyor system can be put to optimum use without jeopardizing the safety of the system.

In the event of any significant deviation in the EnPI, BeltGenius ERIC sends a direct message to the operator. The operator, together with Voith, can then take action to prevent potential damage. The system conforms to ISO 50001 and allows operators to achieve compliance with the latest global standards. Voith has provided for the immediate future by linking into a comprehensive infrastructure for the monitoring of belt conveyor systems.

About the company

Voith Turbo, a Group Division of Voith, is a specialist for intelligent drive solutions, systems and comprehensive services. Customers from highly diverse industries such as oil and gas, energy, rail and commercial vehicles, ship technology, mining and mechanical engineering rely on the advanced technologies and solutions-driven expertise of Voith Turbo.

Voith is a global technology group. With its broad portfolio of systems, products, services and digital applications, Voith sets standards in the markets of energy, oil & gas, paper, raw materials and transport & automotive. Founded in 1867, Voith today has more than 19,000 employees, sales of € 4.2 billion and locations in over 60 countries worldwide and is thus one of the largest family-owned companies in Europe.

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BeltGenius ERIC from Voith identifies inefficient system sections or belt segments and reduces energy and operating costs.

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