

# DRY CARGO

## *international*

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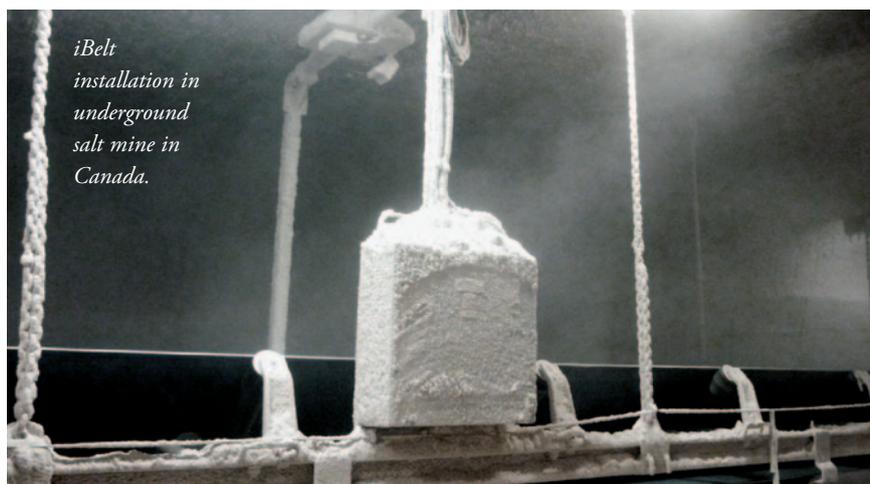
## iBelt by indurad: radar-based conveyor belt performance optimization

indurad's iBelt solution for conveyor belt scanning uses radar technology to measure the volume flow of bulk material on conveyor belts and monitor the belt's alignment. German-made sensor solutions provide real-time measurements, consistently delivering accurate data to operation systems, even under harsh conditions like high dust loads or in foggy environments. iBelt is a contact-free and maintenance-free solution. Therefore, it does not require the recalibration and repair costs that traditional belt measurement systems do. The solution is modular and can include any of the following components:

- ❖ iBeltVOLUME for volume flow;
- ❖ iBeltSPEED for material speed; and
- ❖ iBeltALIGN for belt alignment.

Customers rely on iBeltVOLUME and SPEED to monitor their actual belt load, increasing their production rate while preventing spillage. Meanwhile, iBeltALIGN is typically used to monitor the behaviour of the belt and the material on it, allowing operations to avoid costly downtime caused by activating misalignment switches. The iBelt solution can add significant value, especially on conveyors that are a volumetric bottleneck in the supply chain. The iBelt offers a strong return on investment: after the installation of indurad's iBelt on a bucket wheel excavator in a Greek lignite mine, operators now can remotely control the productivity of their excavator from a central control room, which has resulted in a 20% increase in the excavator production rate. Another customer in the US is using the iBelt to increase the production rates in their secondary and tertiary crushing circuit, where fluctuating material density was limiting their mass-flow controlled process. With the iBelt, the customer has achieved an estimated 500 tonnes per hour increase in production.

Upon customer request, the iBelt solution also offers advanced features. Using the measured cross section, the centre of gravity and the position of the peak load of the material can be determined, which provides guidance for the customer to adjust the material transfer or feed supply to the



*iBelt  
installation in  
underground  
salt mine in  
Canada.*

belt. Based on the alignment measurement, the freeboard between the material on the belt and the belt edges can additionally be detected and monitored. This can help to reduce the unused space on the belt by increasing belt load while monitoring the result on the belt, or to detect a decentralized material flow.

All sensors are built with a robust IP67 housing and with military-proof cables and connectors. indurad's latest generation of iBelts also includes a weatherproof electrical cabinet (IP66) for outdoor use that includes all additional hardware items such as: an induradRadarProcessingUnit (iRPU), a 24V power supply, a fibreoptics-

ready ethernet switch, and a remote access unit.

iBelt represents a reliable and highly robust step towards the digitalization of mines, sophisticated process control, device optimization, and reduced belt wear. indurad has delivered over 100 iBelts to customers globally, handling typical bulk commodities like iron ore, coal, lignite, copper ore, fertilizers, tar sands or wood chips. indurad sensors operate in the harshest conditions found in heavy industry operations and have been deployed in open pit and underground mines, ports, stockyards, covered stockpiles, domes, and even on offshore vessels.



*iBelt in a copper processing plant in the US.*

### ABOUT INDURAD

indurad is a Germany-based global supplier of radar-based automation technology. indurad's solutions are used to de-bottleneck bulk materials handling systems in mining and port operations. indurad has successfully implemented advanced automation solutions in Africa, Australia, Brazil, Canada, and Europe. indurad's proprietary sensors are part of a multi-purpose solution family that covers real-time inventory control, 2D and 3D stockpile visualizations, machine positioning with high accuracy, speed and volume flow control for conveyor belts, shiploaders, and more. indurad has partners and clients in the mining, marine, and bulk materials handling industries on all continents and has local offices in Australia, Brazil, Canada, Chile, Russia, and South Africa.