

German Bionic case study

## IoT-enabled human-machine lifting systems

Powered by BICS SIM for Things



# Improve efficiency and throughput with seamless connectivity for intelligent exoskeletons

## Challenge

Work that involves variability and heavy lifting often needs to be performed by humans and cannot be fully automated. This is a trigger for injury and chronic pain, leading to low productivity, lost time due to injuries and employee attrition. The World Health Organization cites musculoskeletal conditions as being the leading contributor to disability worldwide, with low back pain being the single leading cause of disability globally.<sup>1</sup> Businesses in any industry that involves repetitive but unpredictable heavy lifting, from smart factories to healthcare, are demanding solutions that provide workers with safer working conditions, and that allow them to be more productive and healthier in and out of work, to enjoy longer careers.

## Solution

### Intelligent connected power suit to make heavy lifting safe and easy

Introducing the intelligent power suit from German Bionic, underpinned by global BICS IoT connectivity. By combining human intelligence with machine power, the suit, worn on the body like a backpack, supports and enhances the wearer's movements, reducing the risk of accidents and excessive strain. Embedded sensors and built-in IoT connectivity enable ongoing improvement and integration with smart factory systems.

### IoT-enabled performance optimization

Embedded IoT connectivity allows for ongoing optimization from machine learning through the sensors in the suit.

### Flexible platform with APIs

Easy provisioning and operation via API and simplified integration with existing back-end IT, smart factory and Industry 4.0 management systems in the cloud.

### Reliable, seamless global connectivity

Secure, reliable connectivity across 700 networks in more than 200 countries via the BICS SIM for Things cellular connectivity solution for IoT, for application in any type of indoor or outdoor operating environment.

### Autonomous device management

Full control to autonomously bulk-manage any number of intelligent power suits. Perform over-the-air device updates, predictive maintenance, analytics and troubleshooting.

## Benefits

### Improved efficiency and throughput

Improve performance and throughput by providing ergonomic support for heavy lifting tasks.

### Analytics and insights

Optimize processes and goods handling within the organization through integration with other machines and software combined with continuous data collection and analytics.

### Create a sustainable healthy workplace

Cut lost time and improve morale and worker quality of life by keeping workers safe from injury.

### Reliable connectivity

Keep suits and workers connected across factories, countries and networks with reliable, secure worldwide coverage.

<sup>1</sup> <https://www.who.int/news-room/fact-sheets/detail/musculoskeletal-conditions>