

# Cray X

Smart, fully connected exoskeleton

Discover new dimensions  
in human augmentation



# Smarter, stronger, and more versatile

The fully connected **German Bionic Cray X** power suit provides up to **30 kg support** per lifting movement for the lower back as well as active walking assistance for the legs. Made with **ultralight carbon fiber**, the waterproof exoskeleton also incorporates the unique **AI-based Smart Safety Companion™** early warning system for ergonomics, which assists businesses in optimizing their manual handling processes, protect the health of their workers, and achieving their ESG goals.

## New features:



**Walking assistance**

The **first exoskeleton** of its kind to support two regions of the **body** – the Cray X now adds walking assistance to 30 kg of lifting support.



**Hot-swapping**

A new **40 V energy management system** with hot-swapping capabilities ensures the fully-connected Cray X boosts all-round performance.



**Dust & waterproof**

The lightweight, **carbon fiber** Cray X is **completely dust & waterproof** in accordance with the IP54 standard, enabling deployment under any conditions.



**30 kg**   
lifting support

# Smart Safety Companion™

The German Bionic Smart Safety Companion™ provides a **holistic approach** to workplace **health & safety**. Its purpose goes well beyond merely **alerting of instances of poor posture or incorrect lifting practices**. Rather, it represents an intelligent AI-based tool to assist management and supervisors to identify potentials for ensuring workplace processes are designed as ergonomically and effectively as possible on the shop floor. In this way, the early warning system for ergonomics provides a **further level of protection for workers in manual handling environments** – avoiding premature fatigue, thus preventing subsequent errors and personal injury. It therefore unlocks the gates to entirely new potentials for business performance, while simultaneously offering extensive functions that let businesses easily monitor and report on the achievement of their increasingly important ESG and sustainability goals. The cloud-based Smart Safety Companion™ is available on demand for any connected Cray X power suit, via OTA (Over-The-Air).

## Key features:

- Highlights unfavorable loads, critical repetitions, risky movements, and bad postures (via digital twin)
- Intelligently recognizes symptoms and levels of fatigue to **avoid critical overload & potential injuries**
- Assists management and supervisors in **identifying potentials for better workplace ergonomics**
- Provides **extensive reporting functions for instant overviews** of the impact of implemented health & safety measures and process optimization potentials

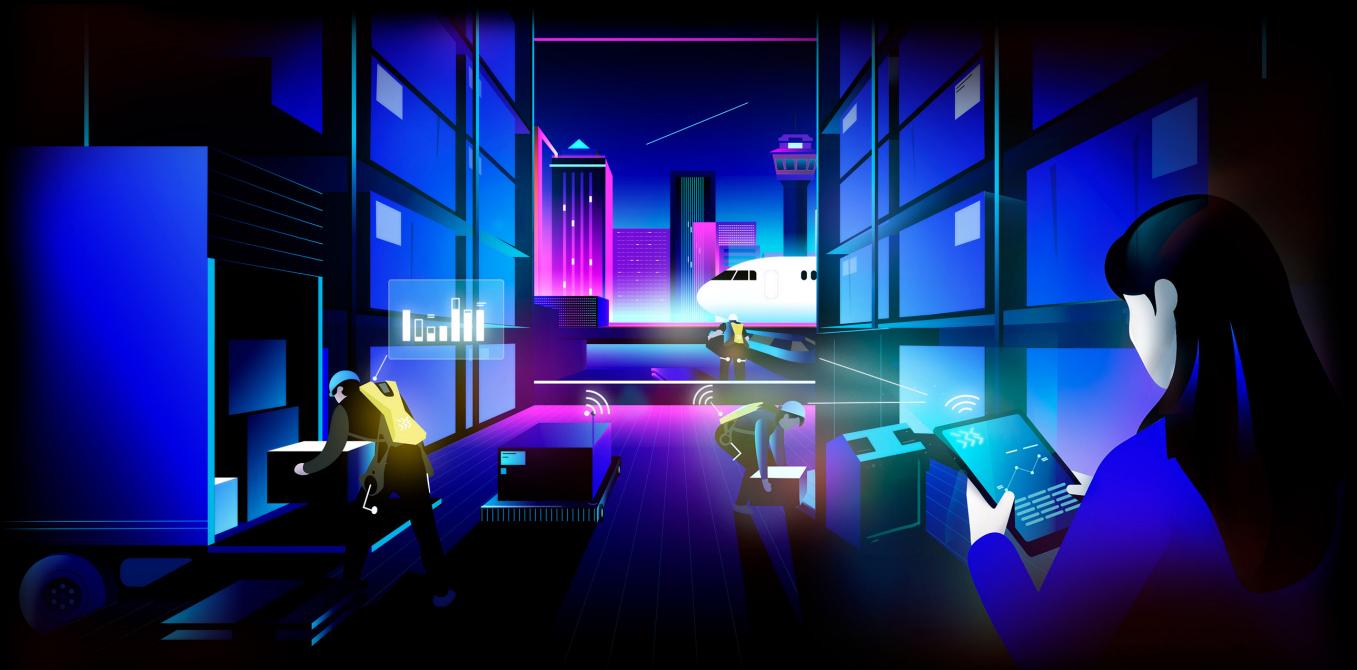


## The challenge

Figures from the US National Safety Council show overexertion was the cause of more than 20% of all occupational injuries in 2020 in the United States, with the warehousing and transportation industries being the most severely affected. 255,490 people were injured, resulting in a total of more than 3.5 million sick days. The body part most frequently at risk was the back. This arises because many employees are required to lift heavy loads at work. The smart, powered Cray X from German Bionic has been designed to protect workers from the effects of excessive strain by providing active supporting for lifting movements.

# Revolutionizing manual handling

The Cray X provides immediate support for workers involved in manual handling tasks. But that is just the beginning for making workplace processes more reliable and effective in the long term. Only German Bionic provides a complete system solution that can be integrated into digital logistics and smart warehouse workflows. It also delivers real-time data to measure its impact – not only for the health and wellbeing of workers – but also for sustainably boosting efficiency in supply chain processes and ultimately the company's profitability.



## Fully connected

The world's first and only fully connected exoskeleton platform delivers real-time data to prove the impact it makes. Easily integrates in all industrial IoT environments and Smart Factory ecosystems to optimize processes throughout the entire supply chain.



## Human augmentation

By combining the power of robots with the flexibility and problem-solving creativity of humans into processes where full automation or other aids are impractical or not viable, the Cray X opens up new dimensions for manual handling environments.



## Greater versatility

Effective physical support for virtually all manual handling and warehousing tasks including commissioning, picking, (un)loading, (de)palletizing, and lifting in general – no matter if indoors or outdoors.